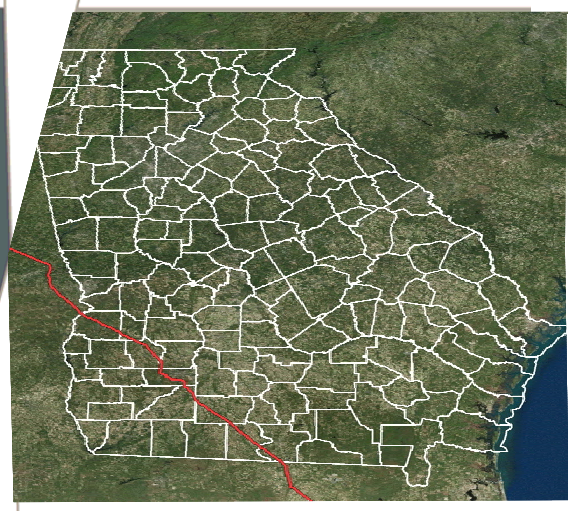
APPENDIX H

SABAL TRAIL PROJECT
KARST CHARACTERIZATION STUDIES – GEORGIA AND FLORIDA

Characterization of Karst Sensitive Areas Relative to the Proposed Route of the Sabal Trail Natural Gas Transmission Pipeline in Georgia



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The geological analyses and evaluation contained in this report were prepared by or under the supervision of a licensed Professional Geologist in the State of Florida.

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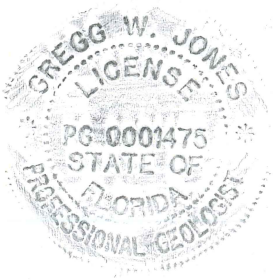

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1 Characterization of Karst Sensitive Areas Relative to the Proposed Route of the Sabal Trail Natural Gas Transmission Pipeline in Georgia

This report characterizes the hydrogeology and karst features of the region underlying the proposed route of the Sabal Trail Natural Gas Transmission Pipeline in Georgia. The report identifies important karst features that could convey contaminants into the Floridan aquifer and affect the construction and stability of the pipeline.

1.1 Hydrogeologic Characterization

Figure 1 shows the proposed route of the Sabal Trail natural gas pipeline in Georgia. The area highlighted in red is where the limestone of the Floridan aquifer is unconfined. This area, which is characterized by numerous sinkholes, internal drainage, and springs, is referred to in this report as the "karst sensitive area."

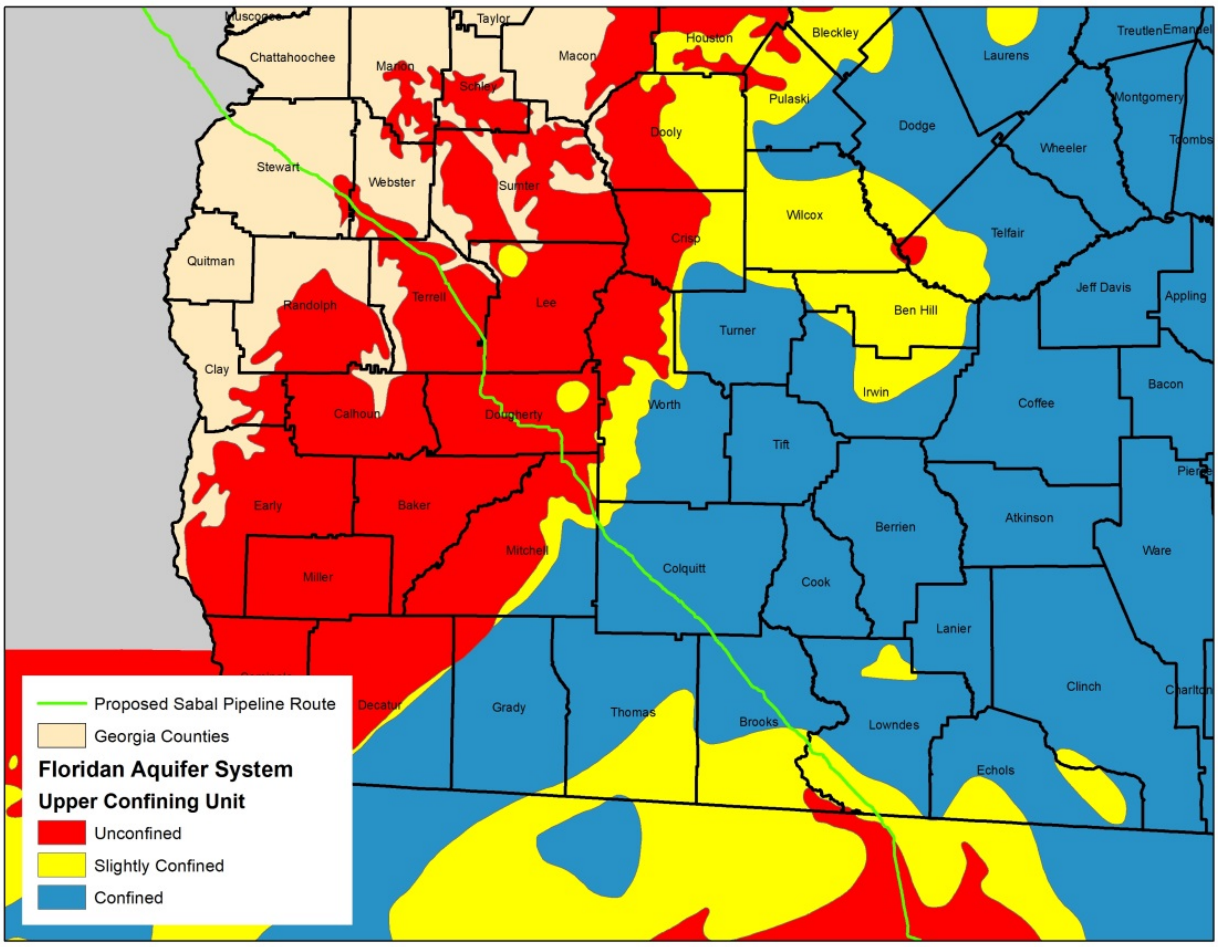

Figure 1. The Proposed Route of the Sabal Trail Pipeline in Georgia and the Area where the Floridan Aquifer is Unconfined (the Karst Sensitive Area).

The geology of southwest Georgia is complex and varied. The Floridan aquifer pinches out in parts of Stewart, Webster and Terrell Counties and in these areas, the principle aquifers include the Clayton (Paleocene) and Claiborne (Middle Eocene) aquifers. Table 1 is a hydrostratigraphic column of southwest Georgia.

Table 1. Hydrostratigraphic Column of Southwest Georgia.

System	Series	Hydrostratigraphic Unit	Stratigraphic Unit
TERTIARY	Miocene	Upper Semi-Confining Unit	Undifferentiated overburden (residuum)
	Oligocene	Upper Floridan Aquifer	Suwannee Limestone
	Eocene		Ocala Limestone
		Lower Confining Unit	Lisbon Formation
		Claiborne Aquifer	Tallahatta Formation
		Semi-Confining Unit	Wilcox Group
	Paleocene	Clayton Aquifer	Clayton Formation

As the proposed pipeline route enters the state from Alabama, the karst-sensitive area is encountered approximately 20 miles east of the Alabama border in southeastern Stewart County. Prior to entering the northern extent of the Floridan aquifer, the pipeline passes through rock of Paleocene and middle Eocene age. The surficial geology in this area is highly variable due to erosion and weathering. According to McFadden and Perriello (1983) and Miller (1986), the area contains outcrops of the Clayton aquifer that consist of microfossiliferous limestone. Additionally the area is overlain by Cretaceous sands, mud and clay outcrops that cover portions of the Clayton aquifer including the Cusseta Sand, Providence Sand and Ripley Formation among others.

The proposed pipeline route continues within the karst-sensitive area in parts of Webster and Terrell Counties. Webster County contains outcrops of the Claiborne aquifer which consist mostly of fossiliferous sands, limestone, sandy limestone and clayey sands overlain by Eocene and Oligocene Residuum (McFadden, 1983 and Huddlestun, 1993). As the proposed pipeline route enters Terrell County, it reaches the confined portion of the Floridan aquifer, which is composed of Ocala Limestone of late Eocene age. The surficial geology, which consists of Eocene and Oligocene residuum (sands, clays and muds created by the chemical weathering of the Floridan aquifer), overlays the Claiborne aquifer. Due to the variability of the surficial geology and lack of carbonate rocks exposed near land surface, karst features are less pronounced in Stewart, Webster and Terrell Counties.

As the proposed pipeline route crosses into Dougherty County, the geography and geology transition into the Dougherty Plain district of the Coastal Plain Physiographic Province (Figure 2). This area is described as having a level land surface with elevations that range from approximately 160 to 200 feet above sea

level. The Dougherty Plain slopes in a south/southeast direction from an elevation of roughly 300 feet to approximately 50 feet above sea level in the vicinity of the Flint and Chattahoochee River convergence.

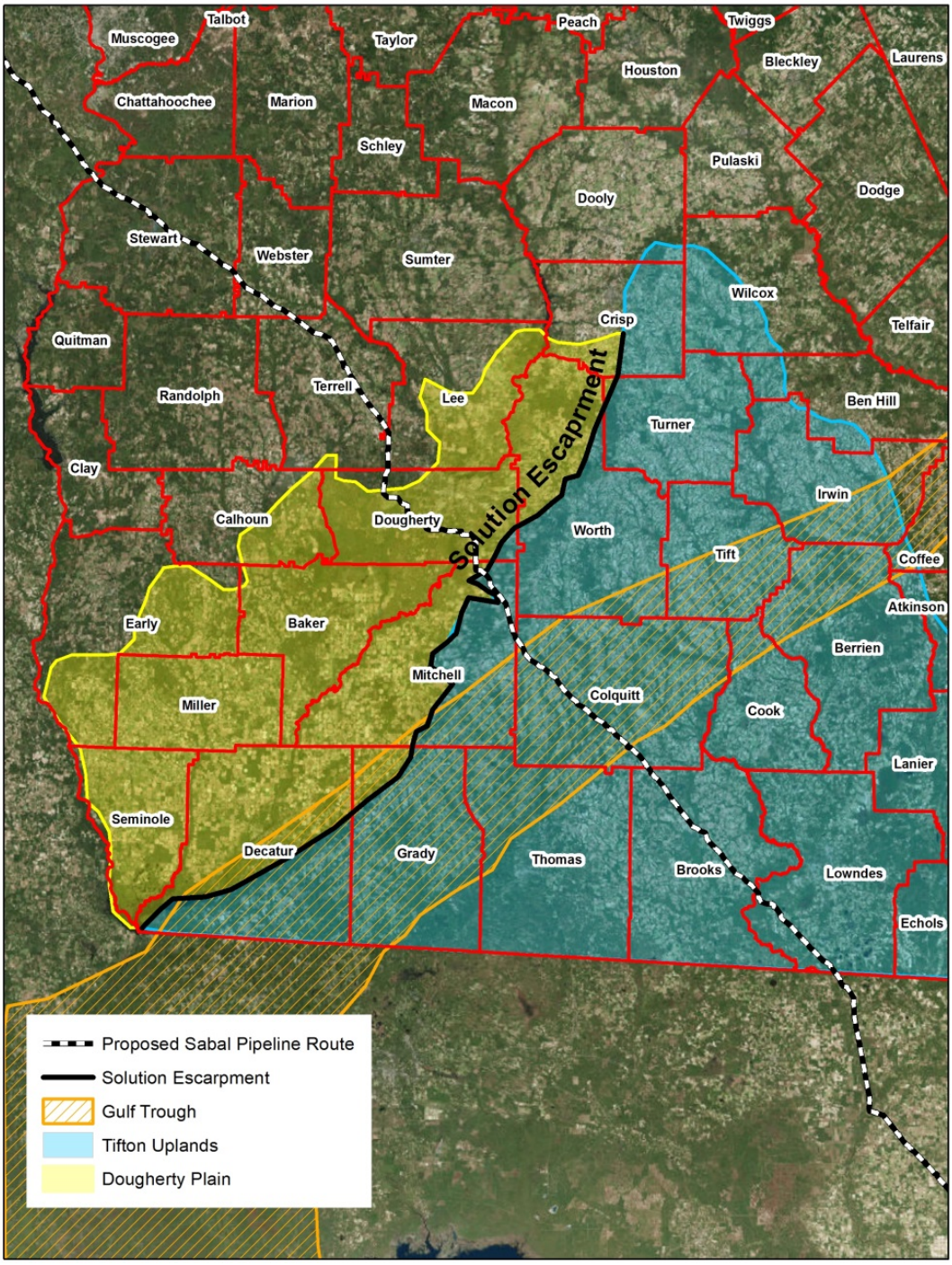

Figure 2. The Proposed Pipeline Route Relative to the Extent of the Dougherty Plain, Solution Escarpment, Tifton Uplands, and Gulf Trough.

The Floridan aquifer is unconfined in the Dougherty Plain. It varies in thickness from a few to 350 feet and serves as the primary water supply aquifer in the area. The limestone is overlain by sand and clay residuum resulting from weathering of the Ocala Limestone of the Floridan aquifer. The residuum has an average thickness of approximately 50 feet and varies in clay content across the plain (Hayes, 1983).

The Dougherty Plain is of particular importance due to the prevalence of karst topography. It is the most sensitive area in Georgia that the pipeline route crosses due to the existence of sinkholes and springs. Sinkholes in the region are generally shallow, circular depressions that vary in size from 10 square feet to acres. Over time, older sinkholes have lost hydraulic connection with the underlying Floridan aquifer due to siltation and clay settlement creating ponds that have the potential to hold water throughout the year. Additionally the area features numerous unmapped springs that feed the local river and stream systems (Hayes, 1983).

Sinkholes in the Dougherty Plain are a direct result of the erosion and removal of the residuum that overlies the Floridan aquifer. In areas where the residuum no longer exists, surface water drains directly into the aquifer with little runoff. Areas of particular concern in Dougherty County are in the vicinity of Albany, where sinkhole development is pronounced.

Hydrologic conditions, groundwater availability, and sinkhole formation have been monitored closely by the United States Geological Survey (USGS) and the Albany Water, Gas, and Light Commission in this area since 1977.

The Albany Water, Gas, and Light Commission's wellfield, located southwest of Albany, has seen the formation of approximately 30 or more sinkholes during the operation of the wellfield, with 6 of the sinkholes forming during 2009 (Gordon, 2012).

As the pipeline crosses into Mitchell County and the eastern edge of the Dougherty Plain, it passes through the Solution Escarpment. The Solution Escarpment rises approximately 125 feet in elevation and faces west-northwest. The western base of the escarpment contains solution features consisting of long and narrow cavities or sinkholes (Torak, 2006).

As the proposed pipeline route crosses through the Solution Escarpment and into the Tifton Uplands, the number of sinkhole features decreases in response to increased confinement of the Floridan aquifer in northeast Mitchell and Colquitt Counties. The Gulf Trough runs through most of Colquitt County where overburden atop the Floridan aquifer reaches thicknesses of up to 300 feet (Torak, 2006).

The Floridan aquifer is considered to be confined throughout most of Colquitt and the northern half of Brooks County and karst features are not pronounced. As the pipeline route nears southeastern Brooks and southwestern Lowndes Counties, confinement of the Floridan aquifer diminishes due to the erosion of the surficial aquifer, especially in areas that drain to the Withlacoochee River. As a result, there is an increased prevalence of sinkholes in the area.

1.2 Identification of Karst Features

Important karst features in the vicinity of the proposed pipeline route identified for this report include closed depressions, fracture traces and springs. The following is a discussion of the methodology used to characterize these features.

Closed Depressions – Although some circular depression features are quarries, excavations, and other features not related to karst, the mapping of circular depressions is a rapid method to obtain a general sense of the location, size and density of sinkholes in an area. Circular topographic depressions were visually identified using aerial imagery in a GIS dataset in a 0.50 mile-wide corridor containing the proposed pipeline route.

Aerial imagery was used due to limited existence of geospatial data of known or potential sinkholes and closed depression locations. The state of Georgia has not constructed a closed depressional feature database that uses topographic elevation data to identify potential sinkhole features. Additionally, the locations of existing sinkholes within the state of Georgia have not been mapped on a large scale basis. This limits the thoroughness of assessments of sinkhole features.

Closed depression features were counted and entered along with the nearest mile post in a table in Appendix A and the location of the features is shown in Figure 3 and 4. Approximately 163 closed depressions were identified in the corridor. However, the proposed pipeline does not actually intersect a great many of these. It is suggested that closed depressions that the pipeline will actually intersect and

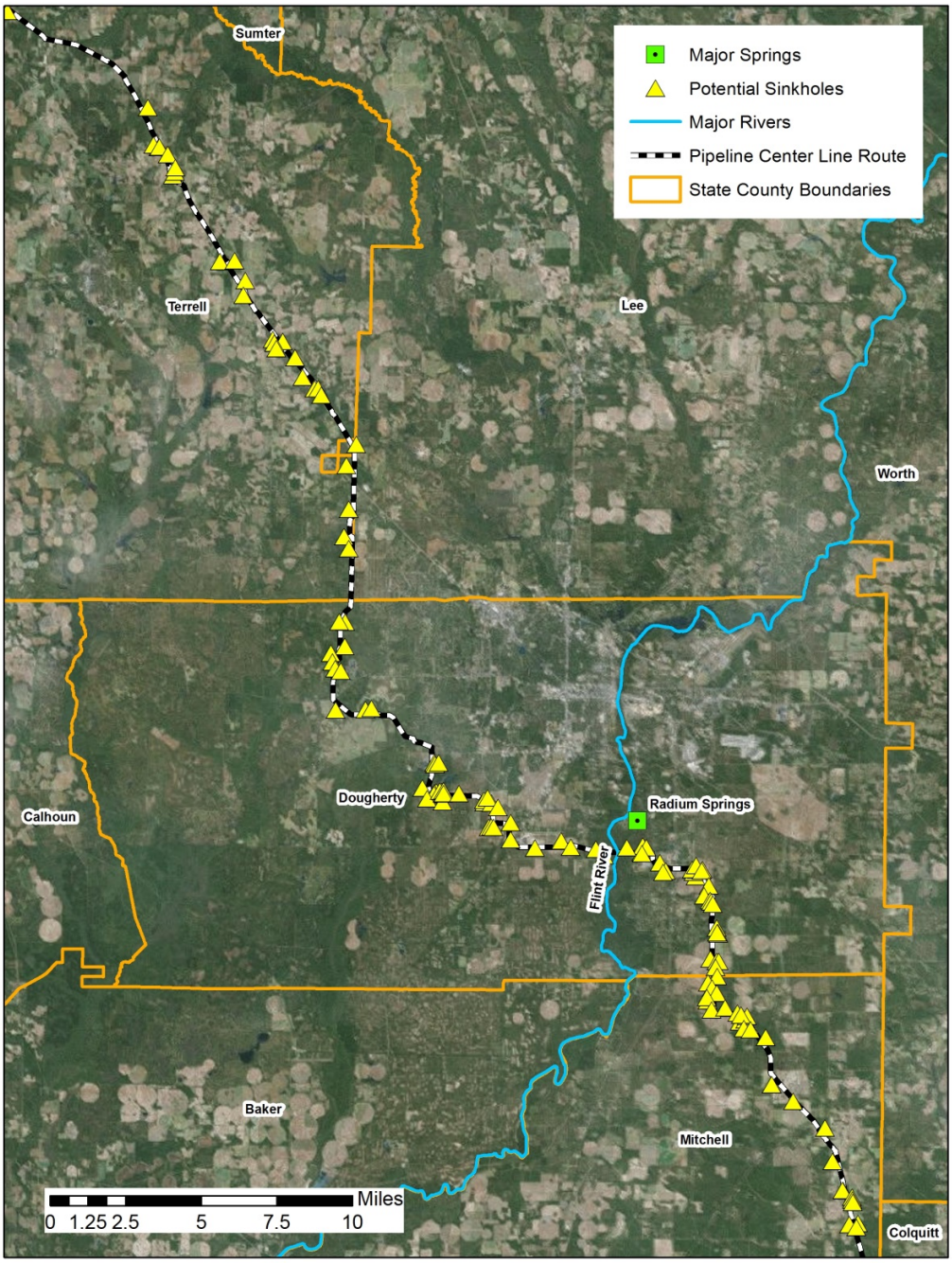

Figure 3. Potential Sinkhole Features Located Near the Proposed Pipeline Route in the Dougherty Plain Karst-Sensitive Area.

large closed depressions near the pipeline be assessed in the field by sinkhole experts to determine the degree that each feature could affect pipeline construction.

Fracture Trace Analysis - Photolinear analysis is a type of remote sensing analysis where linear features observable on aerial photographs or other remotely-sensed images are mapped. For linear features of geologic origin, lineaments are defined as those photolinear features greater than one mile in

length, whereas fracture traces are the same type of feature having a total length of less than one mile. For the sake of simplicity, all linear features are referred to in this report as fracture traces. A fracture trace is the surface expression of the vertical zone of fracture concentration of the underlying limestone

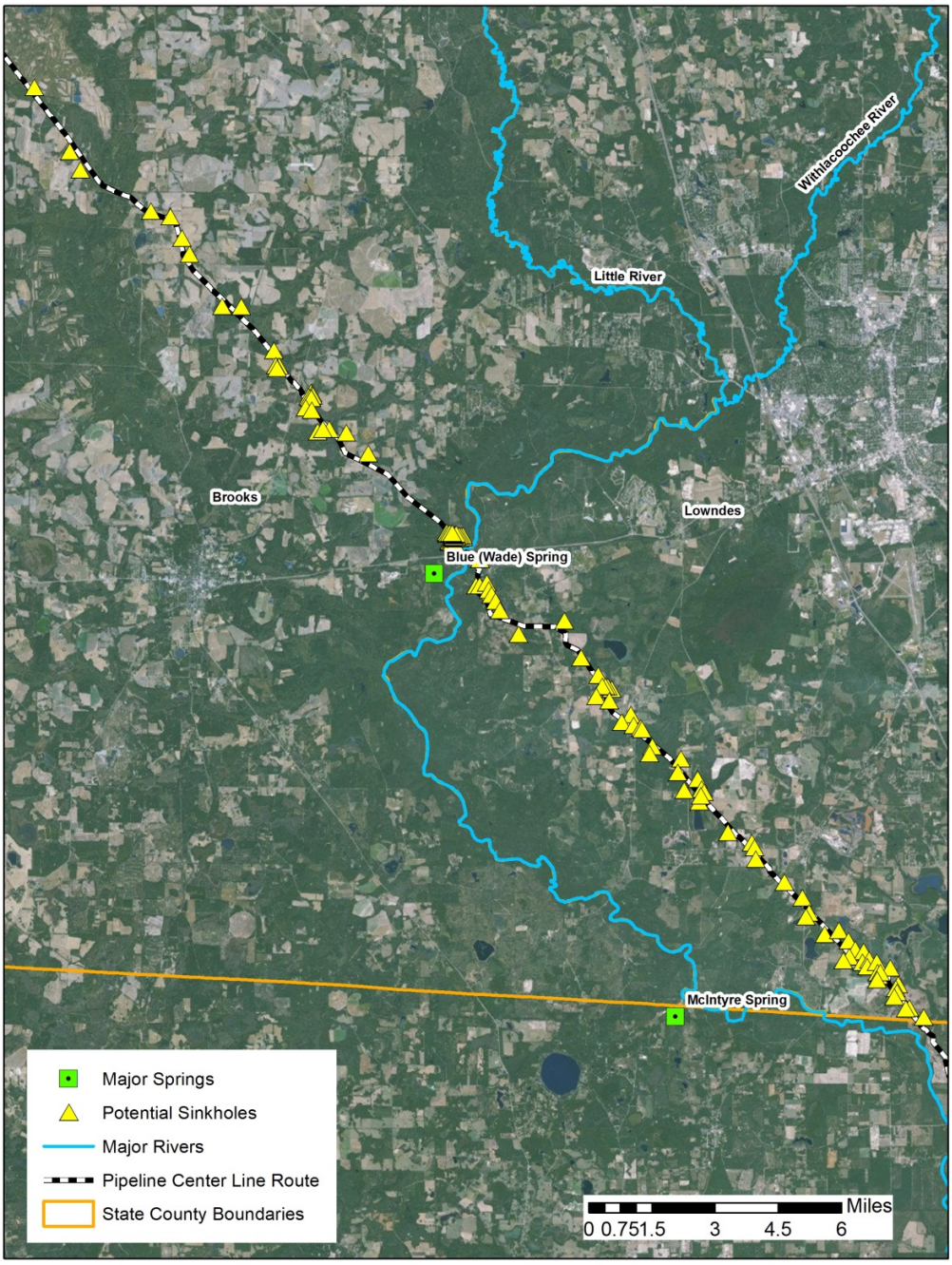

Figure 4. Potential Sinkhole Features Located Near the Proposed Pipeline Route in the Southern Karst-Sensitive Area.

and the width of these zones can vary from a few to tens of meters. In general, longer fracture traces tend to have wider surface expressions of the zone of fracture and wider zones of fracture concentration at

greater depths. Zones of fracture concentration in soluble rocks such as limestone can lead to enhanced dissolution of these rocks due to accelerated chemical and physical weathering.

A fracture trace analysis was conducted in the vicinity of the proposed pipeline route using aerial photography flown in 2010 for Terrell, Dougherty, Brooks, and Lowndes Counties. Fracture traces were identified by visually interpreting linear features that could indicate a fracture zone in the underlying limestone. Seventeen fracture traces that appeared to be of significant scale and that crossed the proposed pipeline route were identified. These are shown in Figures 5 and 6. Appendix B contains aerial photographs upon which the fracture traces have been highlighted and a table showing the pipeline milepost closest to each fracture trace.

Where fracture traces cross the proposed pipeline route, an enhanced degree of caution should be exercised because these areas could be prone to subsidence during construction or sinkhole formation at some point in the future or could serve as pathways for sediment and contaminants to enter the Floridan aquifer. Prior to construction, the intersections of the pipeline and fracture traces should be inspected in the field and geophysical surveys and borings should possibly be employed to assess the potential for subsidence or sinkhole formation.

1.3 Springs and Springsheds

Springsheds are groundwater basins where all precipitation that falls on the surface infiltrates into the limestone of the Floridan aquifer where it becomes entrained in the flow system to eventually discharge at a discrete spring or group of springs. The flow system in the Floridan aquifer within a springshed is likely to be well developed in the vicinity of a spring and dominated by conduits in the limestone that may be large enough to be explored by divers. As distance from the spring increases, the conduits become progressively fewer and reduced in size to the point where eventually most of the flow is diffuse through the intergranular porosity of the limestone matrix. This conceptualization is supported by Upchurch (1992) who stated that even though karst features suggest the existence of large, secondary cavernous porosity, most of the pores tend to be small. This infers that flow within a springshed is mostly slow and predominantly intergranular.

At least three major springs exist in the vicinity of the pipeline, based on data from Miller (1986) and Bush and Johnston (1988),.These include Radium, Blue (Wade) and McIntyre (Figures 5 and 6). Additionally, it is reported that springs feed most of the Flint River in Dougherty County; however, most of those springs are located within the river channel and are not mapped. (Hayes,1983).

Spring and springshed location databases do not currently exist for Georgia and therefore, data pertaining to the location and magnitude of springs and the extent of their springsheds is minimal. However, because of the size and importance of Radium Springs near Albany, a preliminary estimate of the extent of the springshed was developed for this investigation using potentiometric surface data obtained from the USGS.

The Radium Springs springshed and flow lines through the springshed to the spring are shown in Figure 7. The proposed pipeline exits the western lobe of the springshed upgradient of the spring at a distance of approximately 2.3 miles. The closest approach of the proposed route is approximately 1.05 miles. However, this location is south and downgradient of the spring and therefore, proposed construction activities there will not impact the spring.

Table 2 shows the distance from the proposed pipeline route to each mapped spring along the pipeline route in Georgia at its closest approach. Due to the proximity of the pipeline to the springs, caution must be exercised during construction in these areas. As stated above, the potential for extensive karst conduits does exist in the springsheds and care must be taken to identify and plan for them prior to initiating construction.

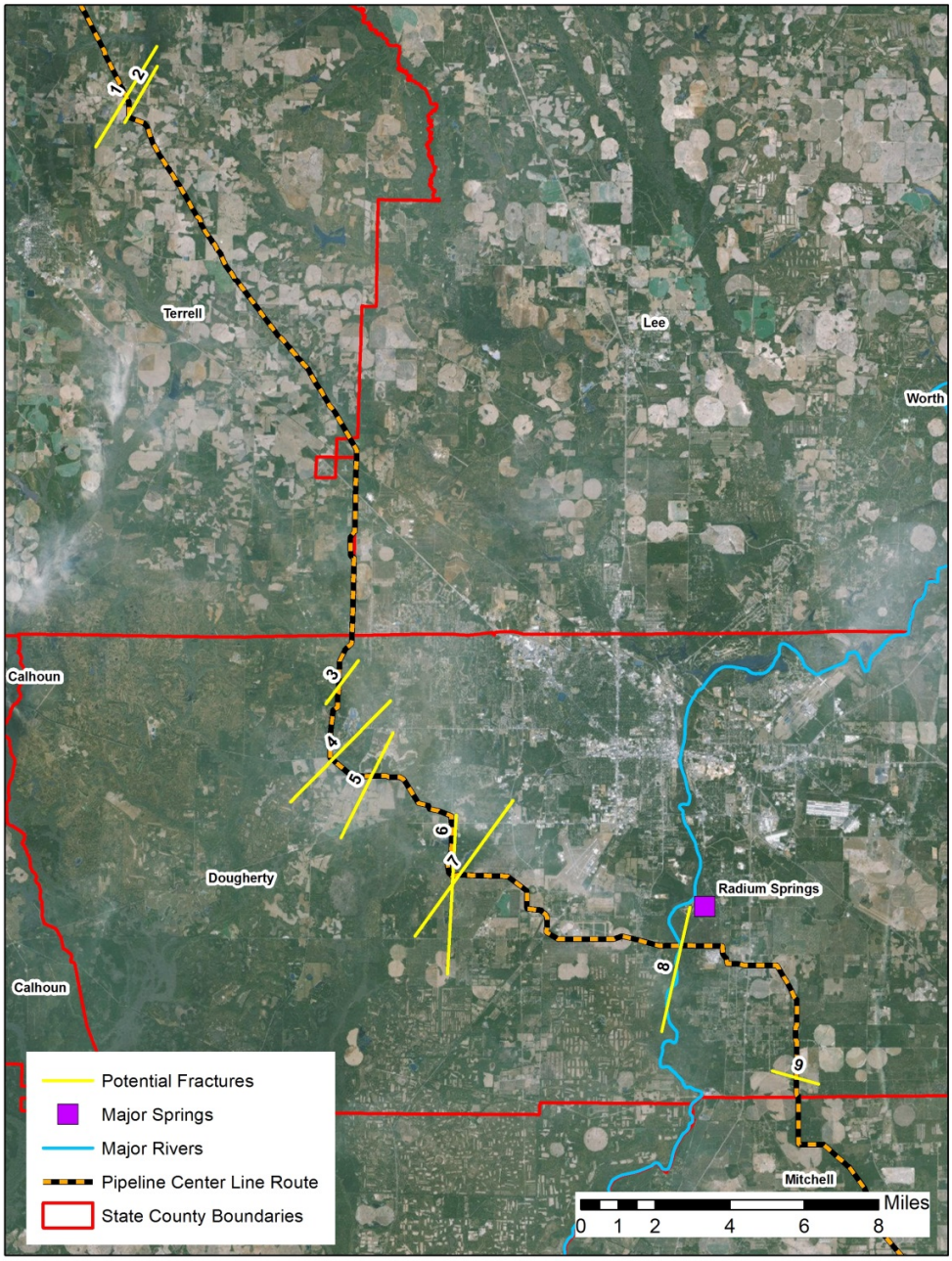

Figure 5. **Location of Fracture Traces of Significant Size that Intersect the Proposed Pipeline Route and Radium Springs in the Dougherty Plain Karst Sensitive Area.**

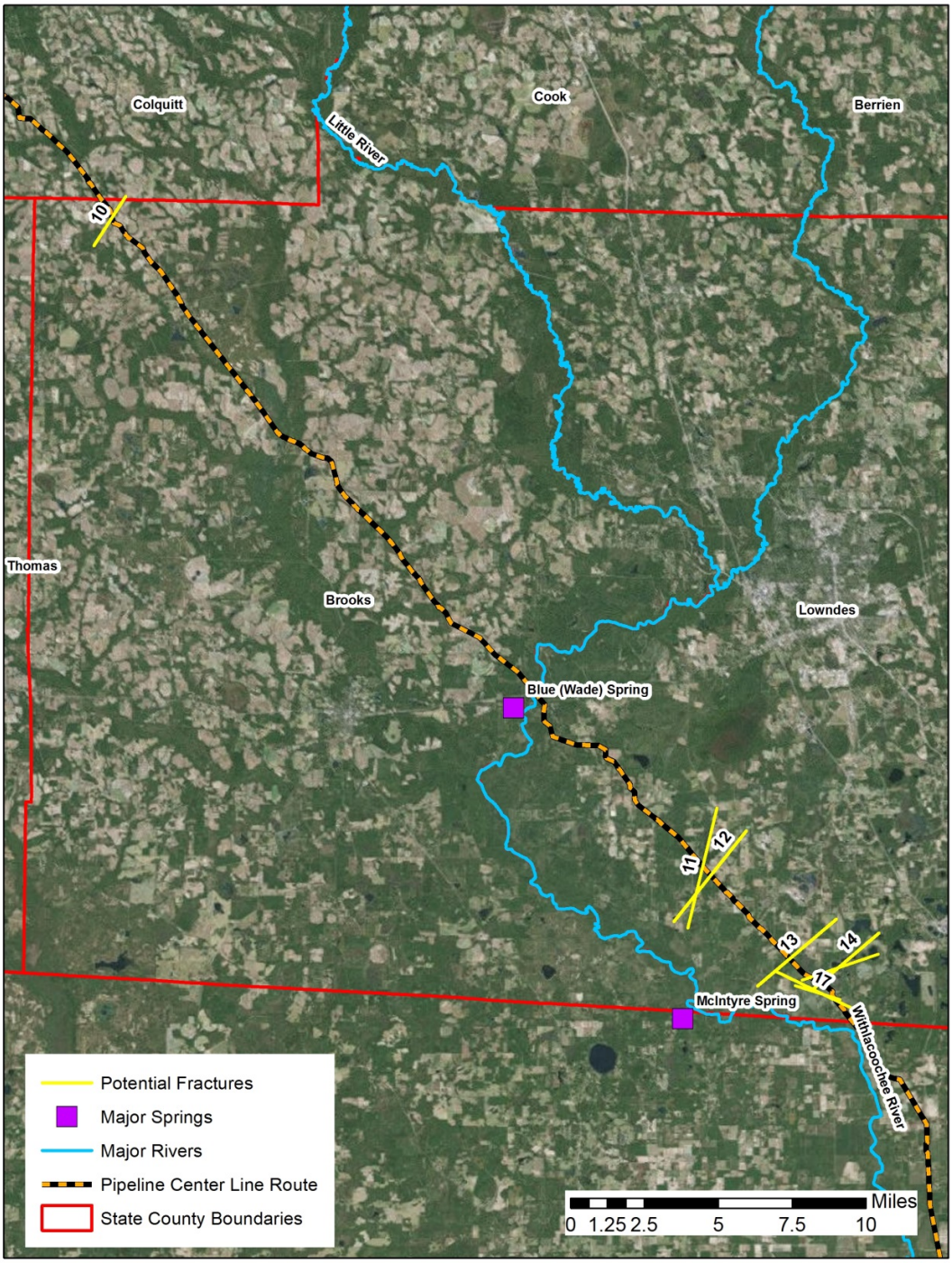

Figure 6. Location of Fracture Traces of Significant Size that Intersect the Proposed Pipeline Route and Blue and McIntyre Spring in South Georgia.

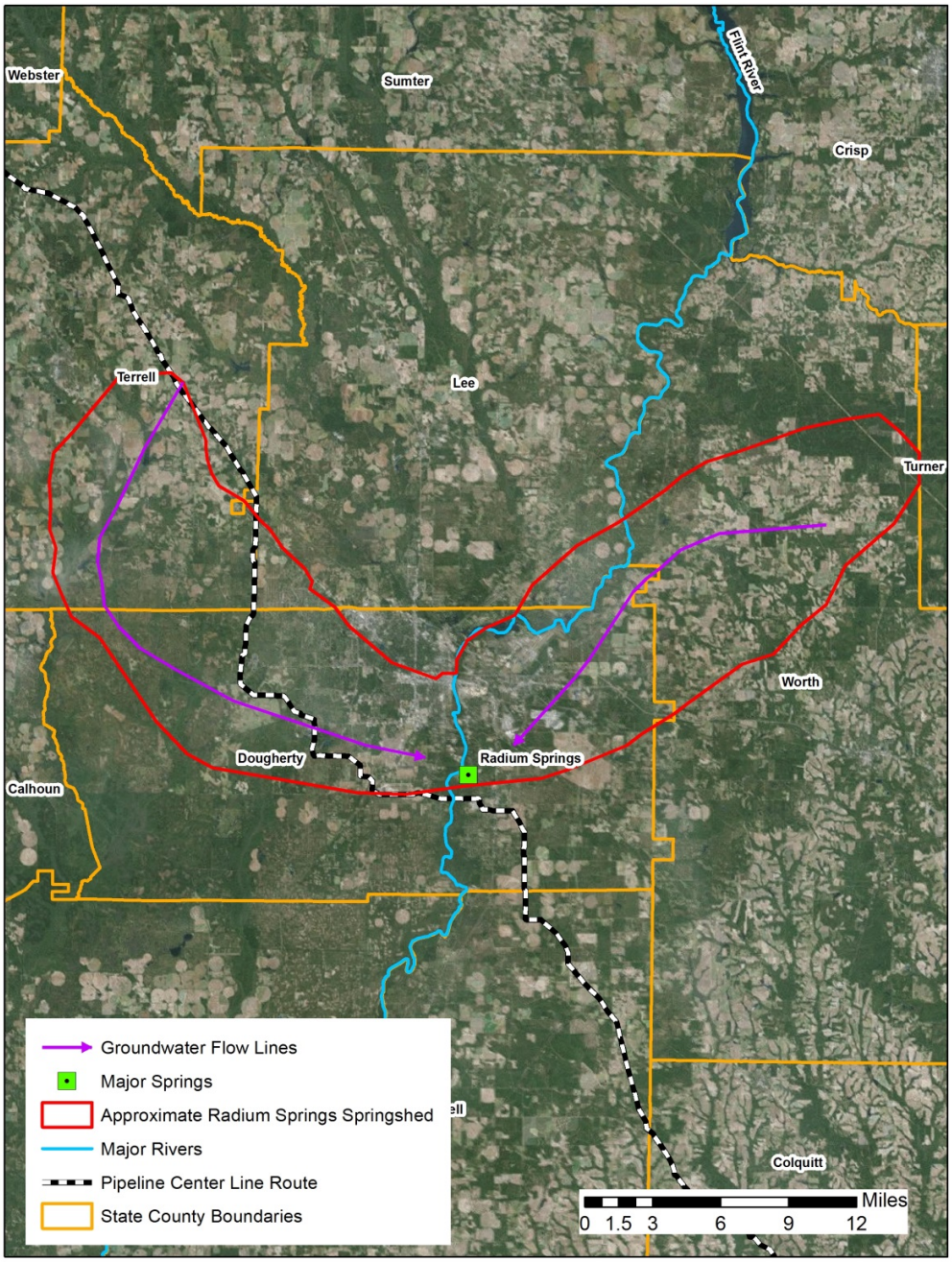

Figure 7. Estimated Extent of the Radium Springs Springshed and Associated Flow Lines.

Table 2. Distance from each Spring to the Route of the Proposed Pipeline at its Closest Approach to the Spring.

Spring Name	County	Closest Distance to the Pipeline within the Springshed (miles)
Radium Springs	Dougherty	1.05
Blue (Wade) Spring	Brooks	0.88
McIntyre Spring	Madison (Florida)	4.03

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Characterization of Karst Sensitive Areas Relative to the Proposed Route of the Sabal Trail Natural Gas Transmission Pipeline

APPENDIX A

LOCATIONS OF POTENTIAL SINKHOLES IN THE CORRIDOR OF THE PROPOSED SABAL TRAIL PIPELINE

Appendix A

Table A-1. Potential Sinkholes in the Corridor of the Proposed Sabal Trail Pipeline Route.

Mile Post	Feature	Number	County
121.7	Potential Sinkhole	1	Terrell
122.4	Potential Sinkhole	1	Terrell
128.2	Potential Sinkhole	1	Terrell
129.4	Potential Sinkhole	1	Terrell
129.6	Potential Sinkhole	2	Terrell
129.9	Potential Sinkhole	1	Terrell
130.3	Potential Sinkhole	1	Terrell
130.5	Potential Sinkhole	1	Terrell
130.6	Potential Sinkhole	1	Terrell
134	Potential Sinkhole	1	Terrell
134.2	Potential Sinkhole	1	Terrell
135	Potential Sinkhole	1	Terrell
135.4	Potential Sinkhole	1	Terrell
137.1	Potential Sinkhole	1	Terrell
137.3	Potential Sinkhole	1	Terrell
137.4	Potential Sinkhole	2	Terrell
138.8	Potential Sinkhole	1	Terrell
139.3	Potential Sinkhole	2	Terrell
141.5	Potential Sinkhole	1	Lee
142.4	Potential Sinkhole	1	Terrell
143.6	Potential Sinkhole	1	Terrell
144.6	Potential Sinkhole	1	Terrell
145	Potential Sinkhole	1	Terrell
147.5	Potential Sinkhole	2	Dougherty
148.4	Potential Sinkhole	1	Dougherty
148.6	Potential Sinkhole	1	Dougherty
149	Potential Sinkhole	1	Dougherty
149.2	Potential Sinkhole	2	Dougherty
150.4	Potential Sinkhole	1	Dougherty
151.4	Potential Sinkhole	1	Dougherty
151.6	Potential Sinkhole	1	Dougherty
154.7	Potential Sinkhole	3	Dougherty

Mile Post	Feature	Number	County
155.4	Potential Sinkhole	1	Dougherty
155.8	Potential Sinkhole	3	Dougherty
155.9	Potential Sinkhole	2	Dougherty
156.1	Potential Sinkhole	3	Dougherty
156.2	Potential Sinkhole	3	Dougherty
156.7	Potential Sinkhole	1	Dougherty
157.6	Potential Sinkhole	3	Dougherty
157.8	Potential Sinkhole	1	Dougherty
158	Potential Sinkhole	1	Dougherty
158.4	Potential Sinkhole	3	Dougherty
158.9	Potential Sinkhole	1	Dougherty
159.4	Potential Sinkhole	1	Dougherty
160.4	Potential Sinkhole	1	Dougherty
161.2	Potential Sinkhole	1	Dougherty
161.6	Potential Sinkhole	1	Dougherty
162.4	Potential Sinkhole	1	Dougherty
162.7	Potential Sinkhole	1	Dougherty
1635.5	Potential Sinkhole	1	Dougherty
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165.1	Potential Sinkhole	1	Dougherty
166	Potential Sinkhole	1	Dougherty
166.1	Potential Sinkhole	2	Dougherty
166.3	Potential Sinkhole	3	Dougherty
166.8	Potential Sinkhole	1	Dougherty
167.1	Potential Sinkhole	1	Dougherty
167.3	Potential Sinkhole	1	Dougherty
167.4	Potential Sinkhole	1	Dougherty
167.5	Potential Sinkhole	1	Dougherty
168.3	Potential Sinkhole	1	Dougherty
168.4	Potential Sinkhole	2	Dougherty
168.5	Potential Sinkhole	1	Dougherty
169.3	Potential Sinkhole	1	Dougherty
169.4	Potential Sinkhole	2	Dougherty
169.6	Potential Sinkhole	1	Dougherty

Mile Post	Feature	Number	County
169.9	Potential Sinkhole	1	Mitchell
170.1	Potential Sinkhole	1	Mitchell
170.3	Potential Sinkhole	1	Mitchell
170.4	Potential Sinkhole	1	Mitchell
170.6	Potential Sinkhole	1	Mitchell
170.7	Potential Sinkhole	1	Mitchell
171	Potential Sinkhole	1	Mitchell
171.5	Potential Sinkhole	1	Mitchell
171.8	Potential Sinkhole	1	Mitchell
172	Potential Sinkhole	1	Mitchell
172.1	Potential Sinkhole	2	Mitchell
172.2	Potential Sinkhole	1	Mitchell
172.4	Potential Sinkhole	1	Mitchell
172.5	Potential Sinkhole	1	Mitchell
173	Potential Sinkhole	1	Mitchell
174.6	Potential Sinkhole	1	Mitchell
175.4	Potential Sinkhole	1	Mitchell
176.7	Potential Sinkhole	1	Mitchell
177.9	Potential Sinkhole	1	Mitchell
178.9	Potential Sinkhole	2	Mitchell
179.1	Potential Sinkhole	1	Mitchell
179.2	Potential Sinkhole	1	Mitchell
179.3	Potential Sinkhole	1	Mitchell
180	Potential Sinkhole	2	Mitchell
180.2	Potential Sinkhole	1	Mitchell
181.8	Potential Sinkhole	1	Mitchell
182.2	Potential Sinkhole	1	Mitchell
215.9	Potential Sinkhole	1	Brooks
217.6	Potential Sinkhole	1	Brooks
218.2	Potential Sinkhole	1	Brooks
220.1	Potential Sinkhole	1	Brooks
220.6	Potential Sinkhole	1	Brooks
221.1	Potential Sinkhole	1	Brooks
221.6	Potential Sinkhole	1	Brooks
223.1	Potential Sinkhole	1	Brooks
223.1	Potential Sinkhole	1	Brooks
224.7	Potential Sinkhole	1	Brooks

Mile Post	Feature	Number	County
225	Potential Sinkhole	2	Brooks
225.1	Potential Sinkhole	1	Brooks
226.1	Potential Sinkhole	8	Brooks
226.3	Potential Sinkhole	1	Brooks
226.4	Potential Sinkhole	1	Brooks
226.9	Potential Sinkhole	2	Brooks
227	Potential Sinkhole	1	Brooks
227.3	Potential Sinkhole	1	Brooks
228.2	Potential Sinkhole	1	Brooks
230.8	Potential Sinkhole	4	Brooks
230.9	Potential Sinkhole	5	Brooks
231	Potential Sinkhole	9	Brooks
231.1	Potential Sinkhole	7	Brooks
231.8	Potential Sinkhole	1	Lowndes
232.3	Potential Sinkhole	1	Lowndes
232.4	Potential Sinkhole	2	Lowndes
232.6	Potential Sinkhole	1	Lowndes
232.8	Potential Sinkhole	1	Lowndes
232.9	Potential Sinkhole	1	Lowndes
233.3	Potential Sinkhole	1	Lowndes
233.9	Potential Sinkhole	1	Lowndes
234.9	Potential Sinkhole	1	Lowndes
235.8	Potential Sinkhole	1	Lowndes
236.4	Potential Sinkhole	1	Lowndes
236.6	Potential Sinkhole	1	Lowndes
236.7	Potential Sinkhole	2	Lowndes
236.8	Potential Sinkhole	2	Lowndes
237.9	Potential Sinkhole	1	Lowndes
238.1	Potential Sinkhole	2	Lowndes
238.6	Potential Sinkhole	1	Lowndes
238.7	Potential Sinkhole	1	Lowndes
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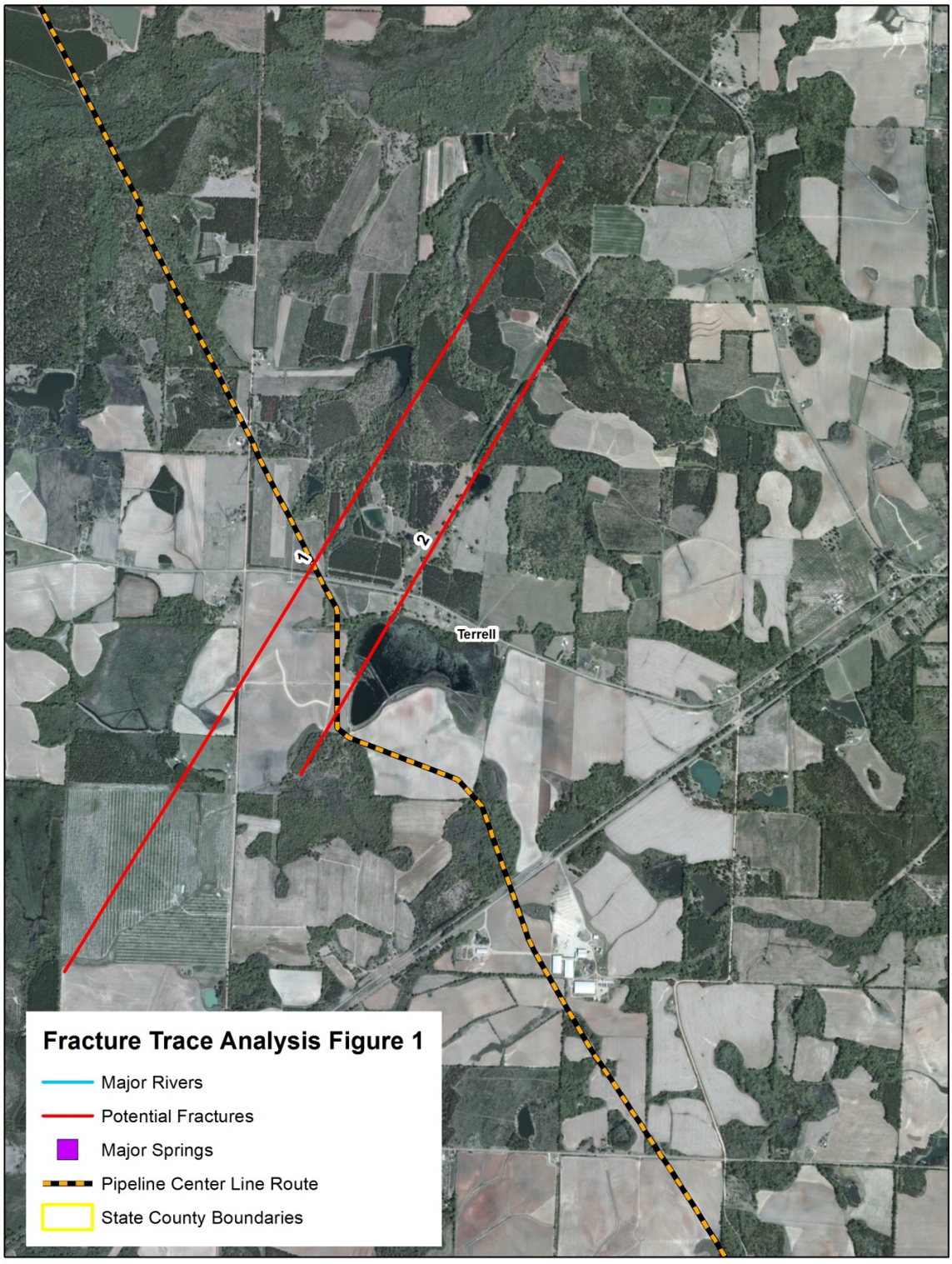
239.5	Potential Sinkhole	1	Lowndes
239.9	Potential Sinkhole	2	Lowndes
240.1	Potential Sinkhole	1	Lowndes
240.2	Potential Sinkhole	2	Lowndes
240.3	Potential Sinkhole	1	Lowndes

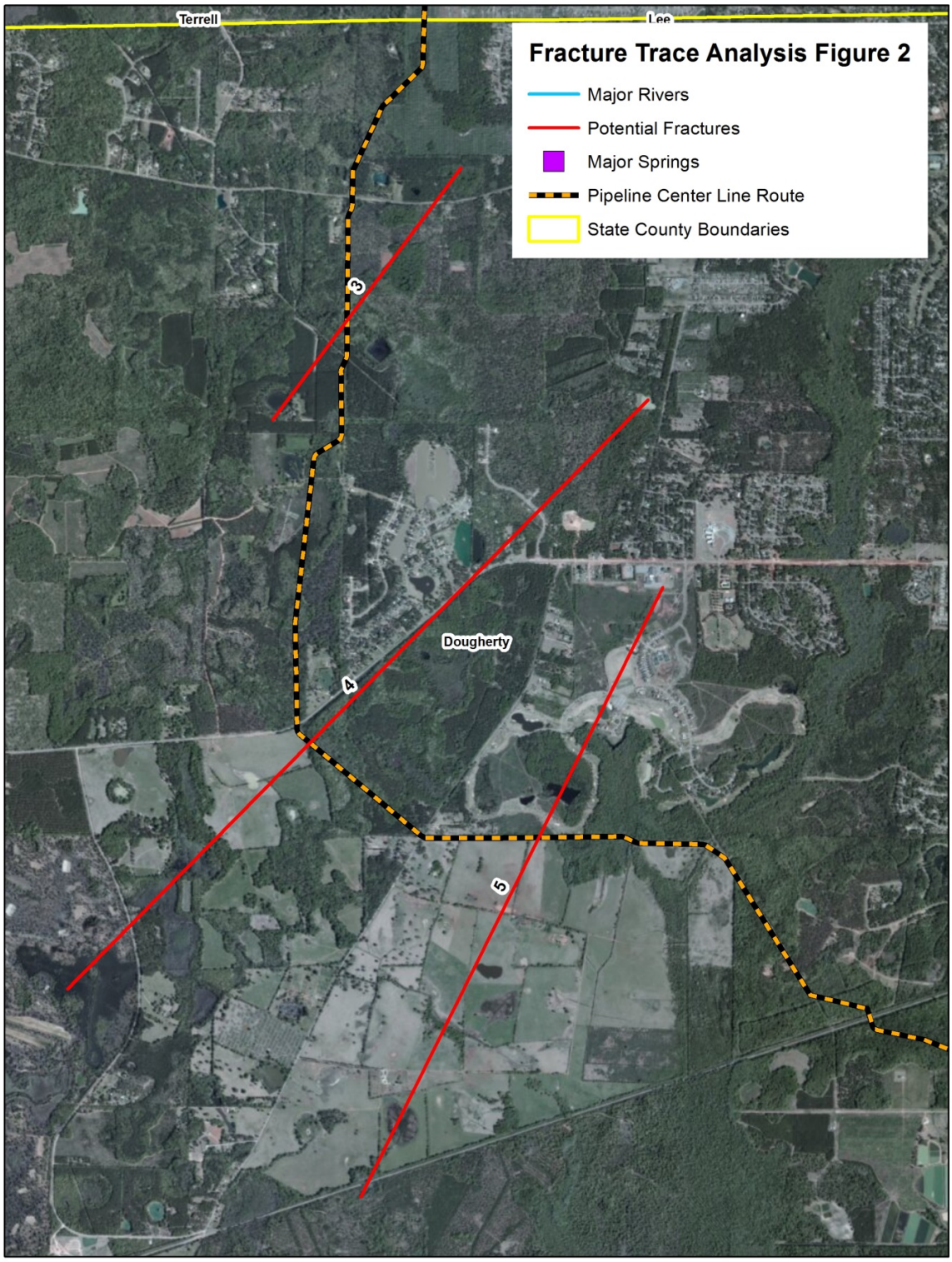
Mile Post	Feature	Number	County
241.3	Potential Sinkhole	1	Lowndes
241.9	Potential Sinkhole	1	Lowndes
242.1	Potential Sinkhole	1	Lowndes
242.3	Potential Sinkhole	1	Lowndes
243.2	Potential Sinkhole	1	Lowndes
243.7	Potential Sinkhole	1	Lowndes
244.1	Potential Sinkhole	2	Lowndes
244.7	Potential Sinkhole	1	Lowndes
244.8	Potential Sinkhole	1	Lowndes
245.2	Potential Sinkhole	1	Lowndes
245.5	Potential Sinkhole	3	Lowndes
245.7	Potential Sinkhole	1	Lowndes
245.8	Potential Sinkhole	1	Lowndes
245.9	Potential Sinkhole	1	Lowndes
246.3	Potential Sinkhole	3	Lowndes
246.4	Potential Sinkhole	2	Lowndes
246.9	Potential Sinkhole	2	Lowndes
247	Potential Sinkhole	2	Lowndes
247.5	Potential Sinkhole	2	Lowndes
247.8	Potential Sinkhole	1	Lowndes

Characterization of Karst Sensitive Areas Relative to the Proposed Route of the Sabal Trail Natural Gas Transmission Line in Georgia

APPENDIX B

AERIAL IMAGERY USED TO IDENTIFY POTENTIAL FRACTURE TRACES


1
2
Terrell
Fracture Trace Analysis Figure 1
Major Rivers
Potential Fractures
Major Springs
Pipeline Center Line Route
State County Boundaries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Fracture Trace Analysis Figure 2
Major Rivers
Potential Fractures
Major Springs
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State County Boundaries
3
Dougherty
4
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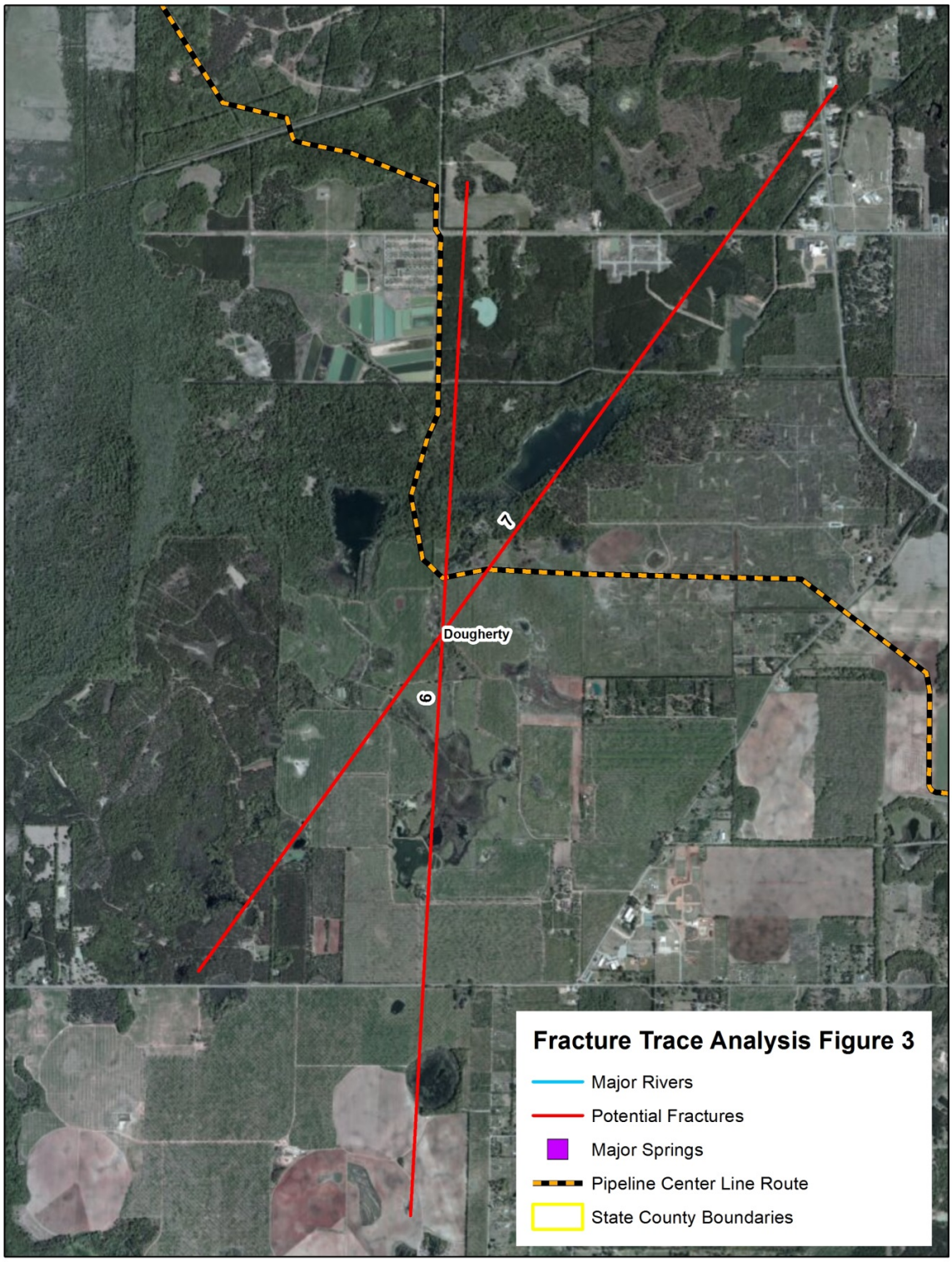
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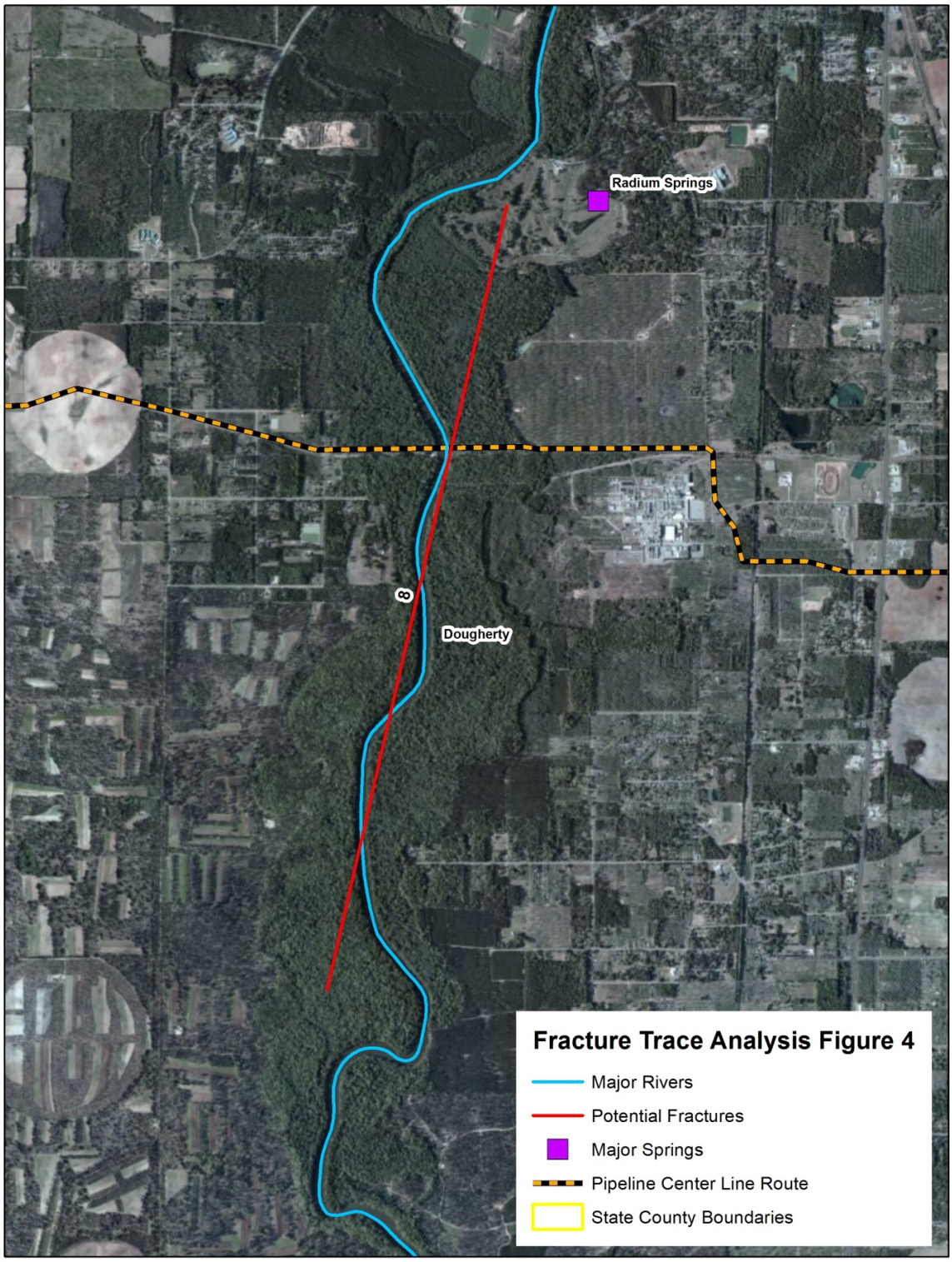
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Fracture Trace Analysis Figure 4
Major Rivers
Potential Fractures
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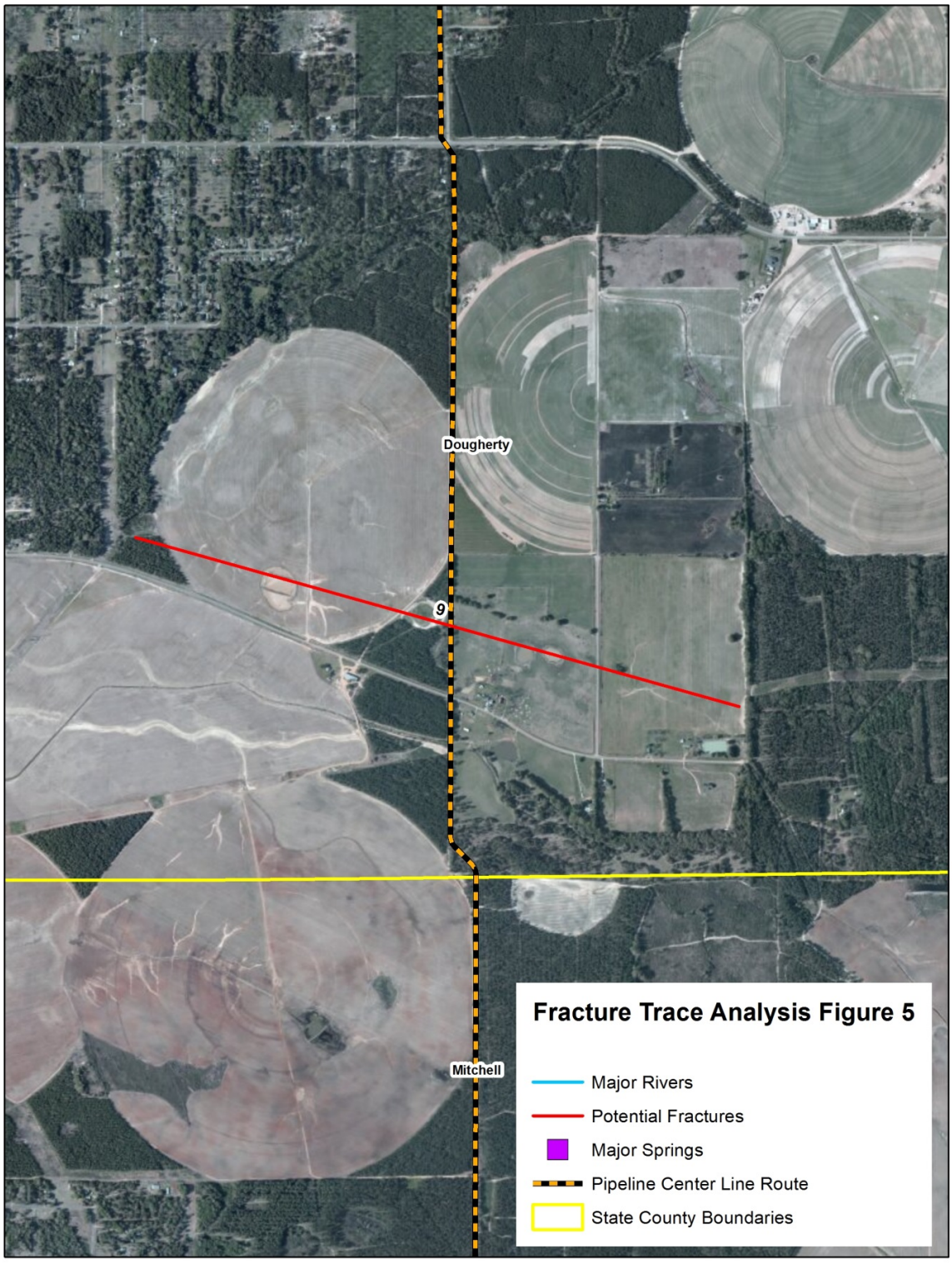
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9
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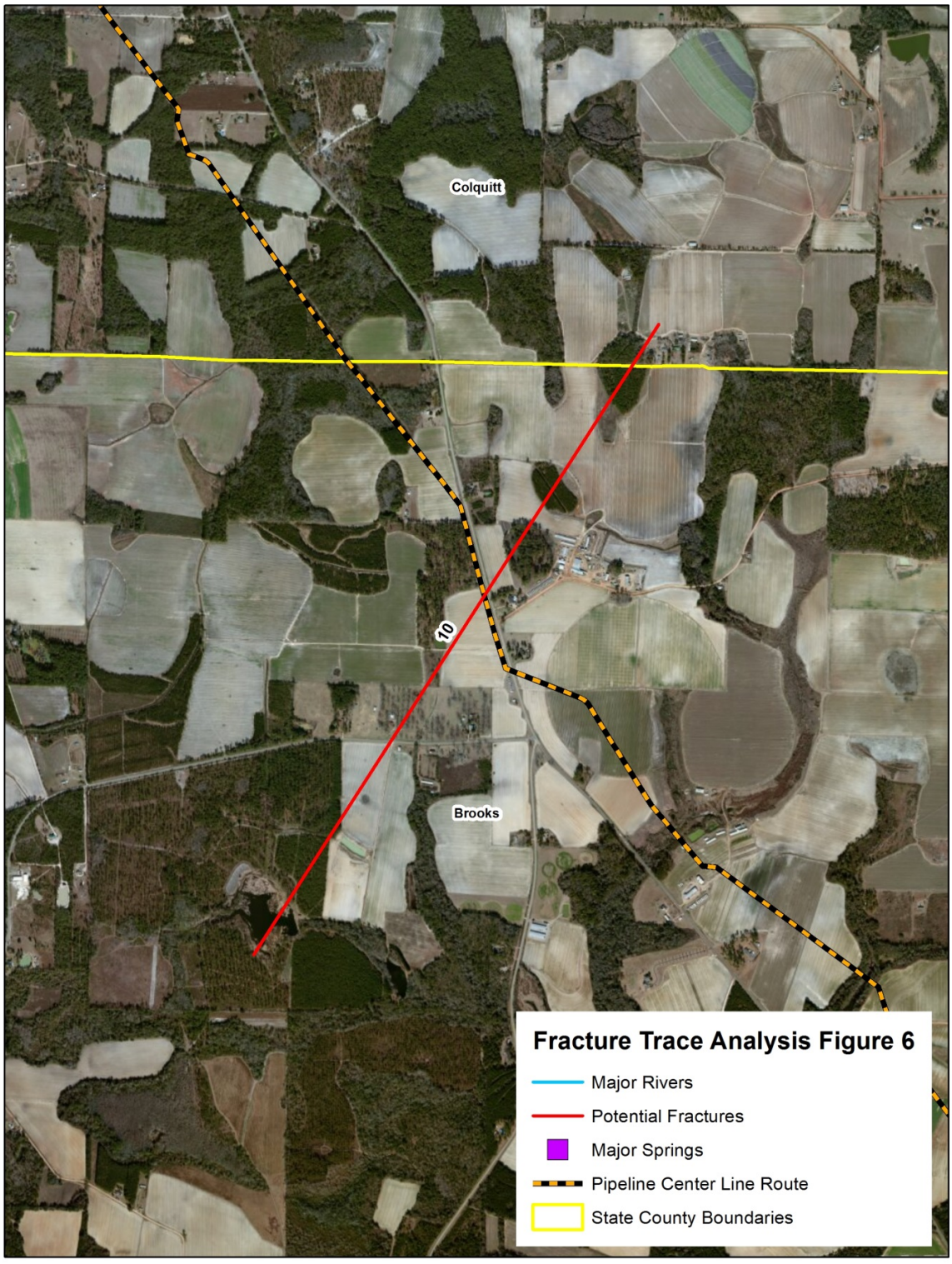
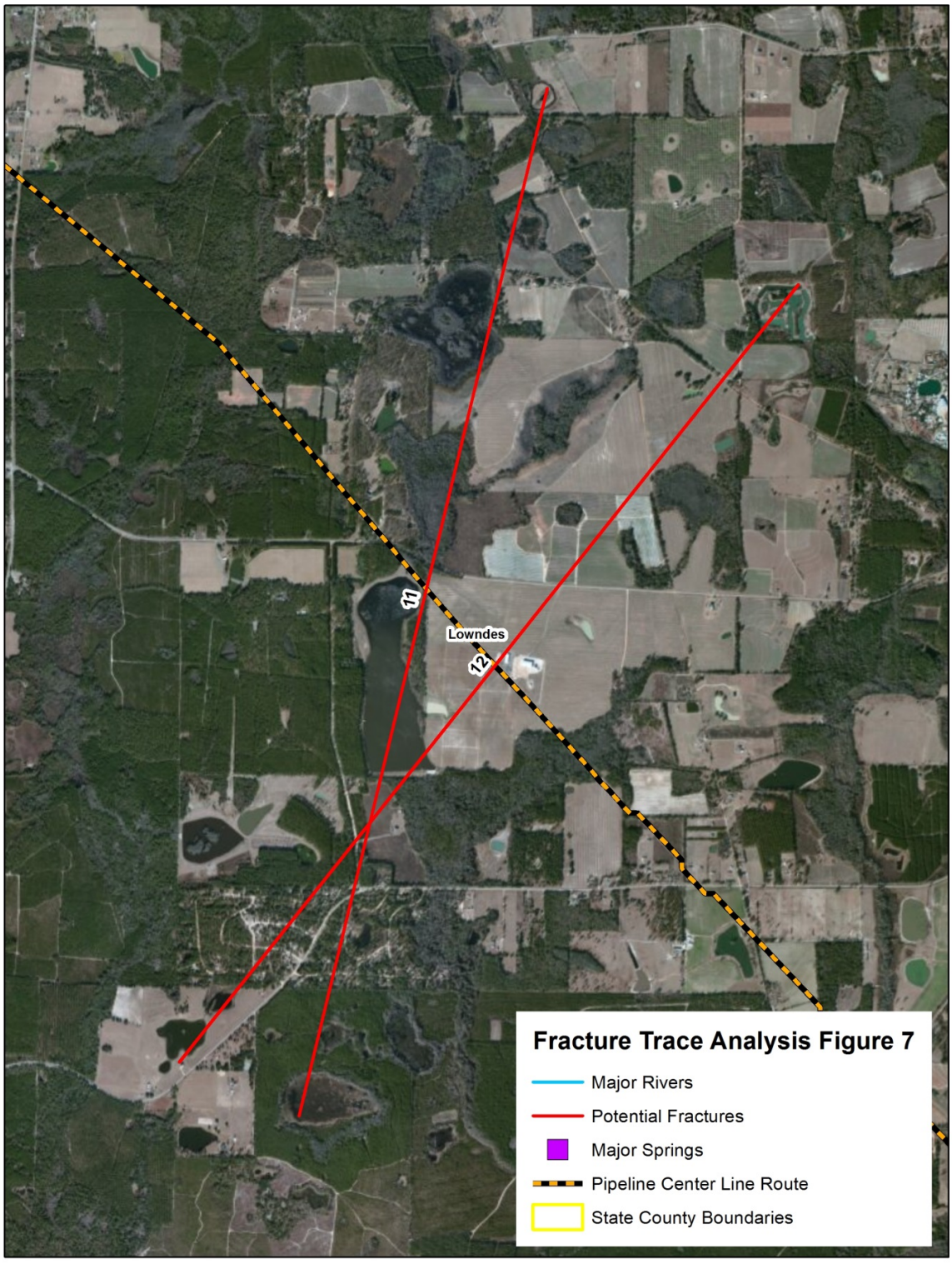
Fracture Trace Analysis Figure 5
Major Rivers
Potential Fractures
Major Springs
Pipeline Center Line Route
State County Boundaries


Colquitt
10
Brooks
Fracture Trace Analysis Figure 6
Major Rivers
Potential Fractures
Major Springs
Pipeline Center Line Route
State County Boundaries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Lowndes
12
Fracture Trace Analysis Figure 7
Major Rivers
Potential Fractures
Major Springs
Pipeline Center Line Route
State County Boundaries

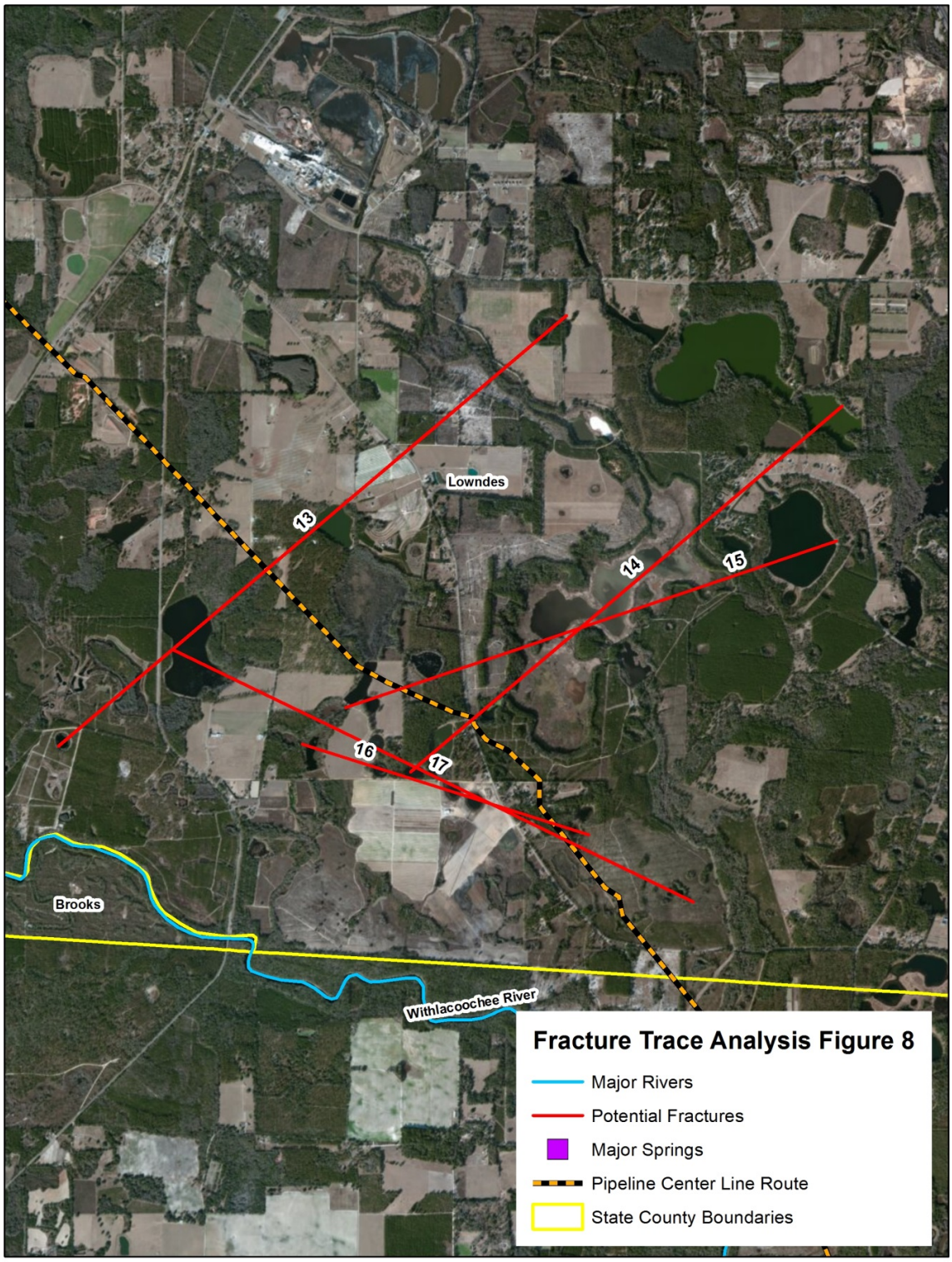
Lowndes
13
14
15
16
17
Brooks
Withlacoochee River
Fracture Trace Analysis Figure 8
Major Rivers
Potential Fractures
Major Springs
Pipeline Center Line Route
State County Boundaries

Table B-1. Location of Fracture Traces in Relation to the Proposed Pipeline Route.

Potential Fracture ID	Mile Post
1	130.2
2	132.0
3	148.2
4	150.3
5	151.4
6	152.0
7	156.1
8	163.2
9	169.3
10	182.4
11	209.3
12	228.3
13	240.8
14	244.7
15	245.7
16	246.1
17	246.8

Characterization of Karst Sensitive Areas Relative to the Proposed Route of the Sabal Trail Natural Gas Transmission Pipeline in Florida

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The geological analyses and evaluation contained in this report were prepared by or under the supervision of a licensed Professional Geologist in the State of Florida.

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Technical Director – Water Resources/Vice President

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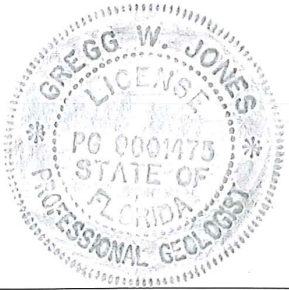

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1 Characterization of Karst Sensitive Areas Relative to the Proposed Route of the Sabal Trail Natural Gas Transmission Pipeline

This report characterizes the hydrogeology of the region underlying the proposed Sabal Trail Natural Gas Transmission Pipeline in the karst region of north central and west central Florida. The report also identifies important karst features that could convey contaminants into the Upper Floridan aquifer and affect the construction and stability of the pipeline.

1.1 Hydrogeologic Characterization

Figure 1 shows the route of the proposed pipeline where it enters the area where the Upper Floridan aquifer is unconfined (area highlighted in blue) just north of the Florida border and exits it in southern Sumter County. For the purposes of this report, this area, which is characterized by numerous sinkholes, internal drainage, sinking streams, and springs, is referred to as the "Karst Sensitive Area." The term "sensitive" is in reference to the ease of development of karst features in this area due to the unconfined nature of the Upper Floridan aquifer.

Shortly after entering Florida, the proposed pipeline route crosses the Cody Scarp, a karst escarpment that extends from near Gainesville, in Alachua County, to west of Tallahassee in Leon County (Figure 2). The Cody Scarp coincides with the northern extent of the area where the Upper Floridan aquifer becomes unconfined.

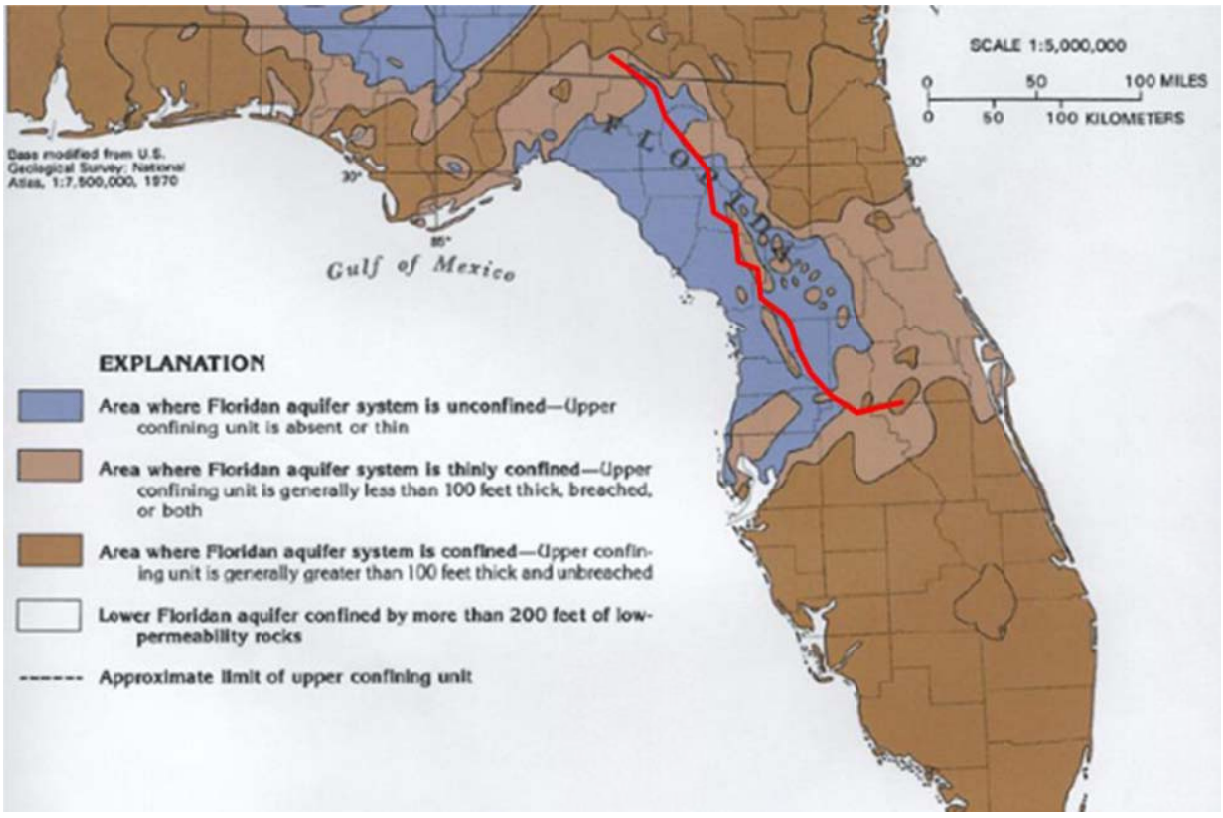

Figure 1. Approximate Location of the Proposed Pipeline Route (red line) in Relation to the Area where the Upper Floridan Aquifer is Unconfined (the Karst Sensitive Area).

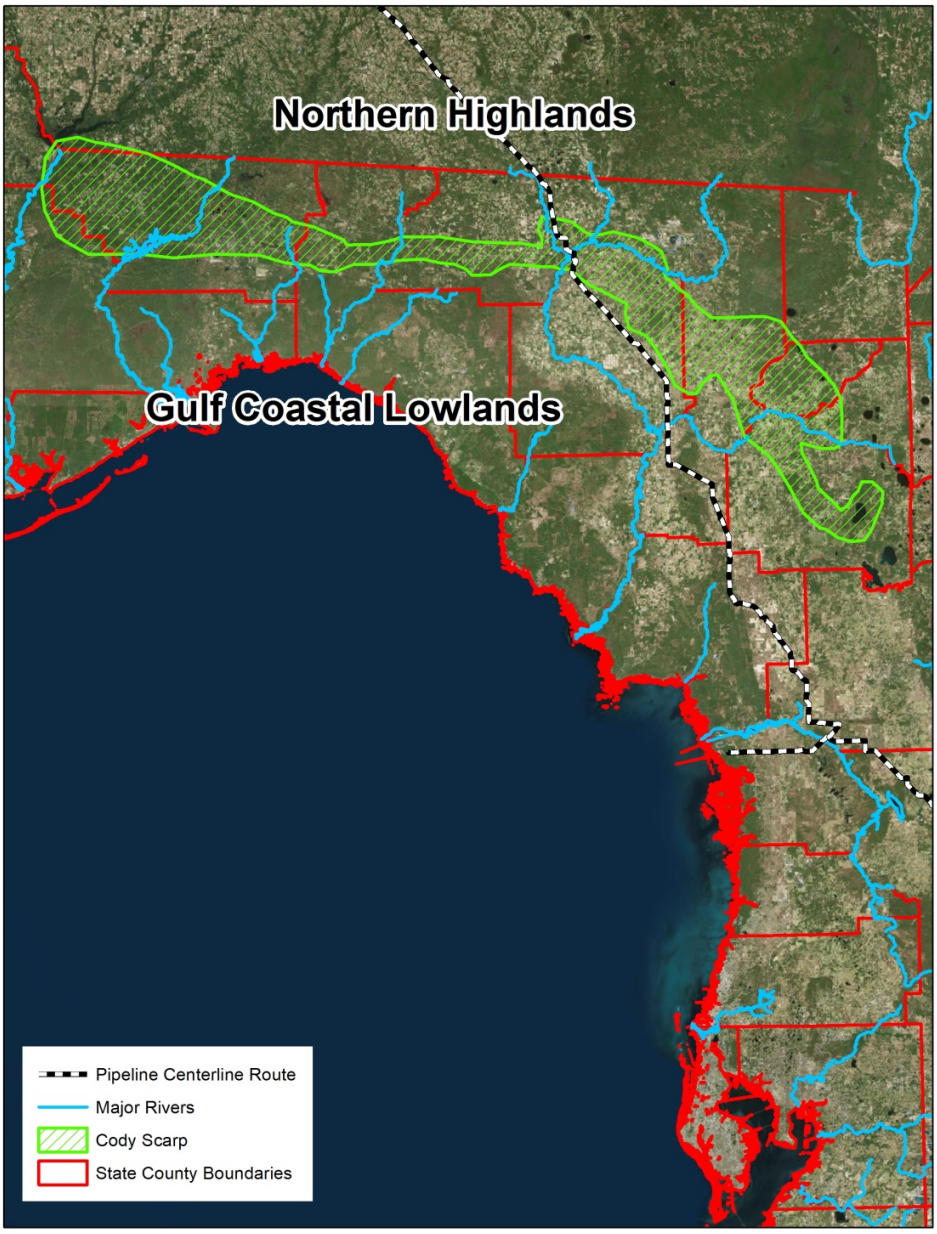

Figure 2. The Proposed Pipeline Route Relative to the Extent of the Cody Scarp.

Because numerous sinkholes, sinking streams, siphons, springs, and other karst features extend along the length of the scarp, it is the most sensitive area in Florida that the pipeline will traverse.

The following information on the Cody Scarp was obtained from a report prepared by Upchurch (2007) entitled: An Introduction to the Cody Escarpment, North Central Florida. The Cody Scarp was first named by Puri and Vernon (1964), who attributed its formation to a combination of Plio-Pleistocene shoreline development and fluvial/karst erosion. The segment of the scarp within the Suwannee River Water Management District (District) is predominantly a karst escarpment (White, 1970) that has been modified in many areas by marine shoreline processes. The Cody Scarp is important to understanding the hydrology of the Suwannee River Basin and other areas of north-central Florida because the processes that have formed it greatly affect rivers, groundwater, land forms, and water quality throughout the region.

The Cody Scarp is a topographic break with up to about 100 feet of relief between the Northern Highlands Physiographic Province to the north and east and Gulf Coastal Lowlands Province to the west and south of the scarp. Within the District, the scarp is characterized by sinking streams, springs, and large sinkholes. The sinkholes are large because of the thickness of sand and clay cover that remains over the limestone between these large sinkhole features.

The Northern Highlands are underlain by a thick sequence of erosion-resistant sand, clay, and carbonate sediments of the Miocene Hawthorn Group. More easily eroded limestone and dolostone of the Eocene Ocala Limestone and Oligocene Suwannee Limestone characterize the shallow sediments of the adjacent Gulf Coastal Lowlands. The scarp is a result of marine, fluvial, and karst-related erosion of the Hawthorn Group sediments of the highlands.

Streams that drain to the south and southeast across the Northern Highlands Province have well-developed drainage systems with dendritic drainage patterns. As the streams cross the scarp, they flow into poljes (large flat-floored depressions within karst limestone) and uvalas (multiple smaller individual sinkholes that coalesce into compound sinkholes that are often shallow and irregular in their overall shape due to the merging of smaller sinkholes).

The large sizes of sinkholes in the Cody Scarp are a result of thick cover over the limestone. This cover consists of erosional remnants of the intact Hawthorn Group sediments of the Northern Highlands Province plus residua and sediment derived from erosion and transport of Hawthorn sediments created by scarp retreat. The thicker the cover, the larger the sinkholes will be. Cover is thin in the Gulf Coastal Lowlands Province so sinkholes are small and separated into individual depressions.

Karst development is limited in the Northern Highlands Province. Limestone and dolostone beds within the Hawthorn Group may develop localized caverns and sinkholes that are limited to the thin Hawthorn strata. This form of karst (interstratal karst) results in minor aquifer development and has little effect on the hydrology of the Cody Scarp area.

Because of the localized recharge by streams entering swallets along the scarp, karst is very well developed. Recharge tends to result in vertical karst conduits, both under the large sinkholes and in association with swallets and siphons that capture runoff from the Northern Highlands Province. As the groundwater flow turns to the south and east, away from the scarp, horizontal passages develop. These processes result in the siphon/resurgence systems that characterize many of the streams and rivers.

The route of the proposed pipeline trends slightly to the southeast as it crosses the Cody Scarp in Hamilton County. It then stair-steps east then south until it crosses the Suwannee River and enters Suwannee County, paralleling the scarp until it nears the western boundary of the Ichetucknee Springshed. It then turns south where it crosses the Santa Fe River and enters Gilchrist County.

For the remaining length of the proposed pipeline route in the Karst Sensitive Area, the pipeline is located in the Gulf Coastal Lowlands Province. As explained above, sinkholes tend to be smaller and separated into individual depressions in this province because sediments overlying the limestone are thinner.

1.2 Karst Features

Important karst features in the vicinity of the proposed pipeline route (0.5 mile survey corridor) that were identified for this report include the springsheds of major springs, closed depressions, and fracture traces. The following section provides a description of the features, the methodology used to identify them, and how they could impact or be impacted by the pipeline.

Springsheds - Springsheds in north Florida are groundwater basins where all precipitation that falls on the surface infiltrates into the limestone of the Upper Floridan aquifer where it becomes entrained in the flow system to eventually discharge at a discrete spring or group of springs. Investigations conducted by the Southwest Florida Water Management District (Jones and Upchurch, 1996), and the U.S. Geological Survey (Katz and others, 1999) have shown that the residence time of water in the groundwater basin (the interval of time between precipitation on the surface and discharge at the spring) can range from days to years to decades. Water with a residence time of days likely originates as rainfall in the vicinity of

the spring, enters the aquifer through a nearby sinkhole, and becomes entrained in the conduit system that flows directly to the spring. Water with a residence time of decades may fall as rainfall at the outer boundary of a springshed, where it enters the aquifer and moves as diffuse flow through the intergranular porosity of the matrix of the limestone formation. Eventually, as the water nears the spring, it seeps from the matrix into a conduit that transmits it to the spring.

The flow system in the Upper Floridan aquifer within a springshed is likely to be well developed in the vicinity of a spring and dominated by conduits in the limestone that may be large enough to be explored by divers. As distance from the spring increases, the conduits become progressively reduced in size to the point where eventually most of the flow is diffuse through the intergranular porosity of the limestone matrix. This conceptualization is supported by Upchurch (1992) who stated that even though karst features suggest the existence of large, secondary cavernous porosity, most of the pores tend to be small. This infers that flow within a springshed is slow and predominantly intergranular.

The approximate boundaries of the springsheds of first and second magnitude springs intersected by the proposed pipeline route are shown in Figures 3 and 4. These springsheds were obtained from a number of different sources that include Upchurch (2007), SRWMD GIS data, and SWFWMD GIS data.

The figures show that almost the entire route within the Karst Sensitive Area is contained within the springsheds of numerous springs. In some areas, the proposed route does not appear to be within a springshed. However, because the majority of the Karst Sensitive Area is internally drained, it is likely these areas are contained within springsheds that have not yet been delineated.

Table 1 shows the distance from the proposed pipeline route to each first magnitude spring and major second magnitude springs in a springshed at its closest approach. The table and Figures 3 and 4 indicate that for most of the springs, the proposed route is just outside of the springshed boundaries or crosses the most upgradient portion of the springshed many miles from the spring. As discussed above, diffuse flow through the matrix becomes increasingly more dominant over conduit flow as distance from the spring increases. This will afford the springs a degree of protection because sediment, turbid water, and drilling mud that could enter the aquifer during construction and testing is likely to be filtered out and diluted in the aquifer long before it reaches the spring.

Springsheds that could potentially experience the highest level of effects from the proposed pipeline are those of Rainbow Springs in Marion County and Gum Slough in Marion and Sumter Counties. The proposed route crosses a large portion of the western third of the springshed for Rainbow Springs and passes within 1.8 miles of Rainbow Springs at its closes approach. The proposed route also crosses a significant portion of the Gum Slough Springshed in close proximity to the spring, passing within 1.1 miles of the spring at its closest approach.

Cave Systems and Swallets – The Florida Geological Survey (FGS) has compiled the location of known and mapped cave systems and swallets in a GIS database. The database created by the FGS was used to determine whether cave systems and swallets were located within a 0.5 mile-wide corridor of the proposed pipeline route. According to the FGS database, there are no mapped cave systems or swallets within the 0.5 mile-wide corridor.

Closed Depressions – Although some closed depression features are quarries, excavations, and other features not related to karst, the mapping of closed depressions is a rapid method to obtain a general sense of the location, size and density of sinkholes in an area.

The FGS “closed topographic depressions” GIS dataset was used to identify closed depressions in a 0.5 mile-wide corridor representing the proposed pipeline route. The closed depressions were identified, counted and entered along with the nearest mile post and noted in Appendix A. Approximately 2,895 closed depressions were identified within the corridor but the proposed pipeline will not actually intersect

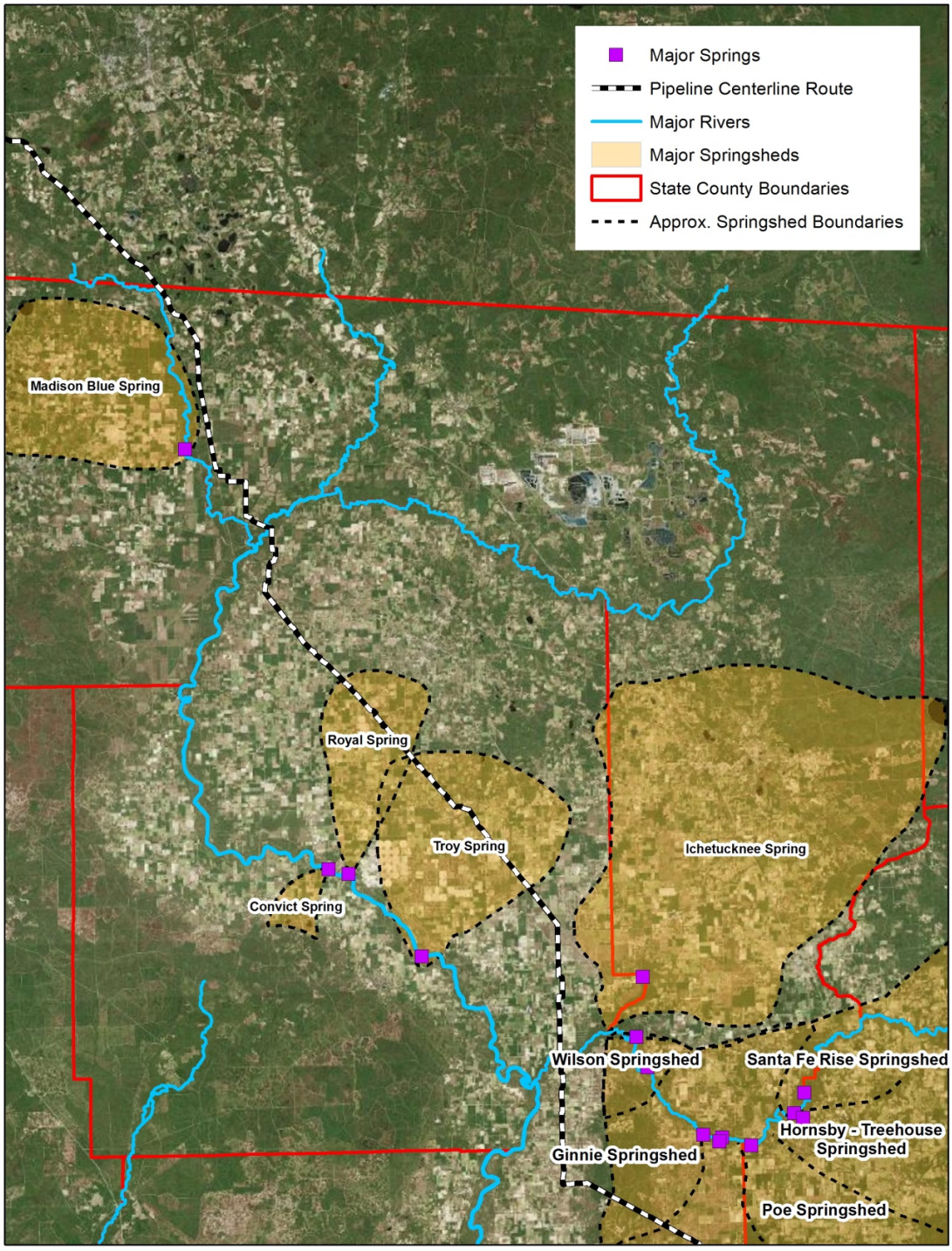

Figure 3. **Approximate Springshed Boundaries of First Magnitude and Major Second Magnitude Springs in the Northern Portion of the Karst Sensitive Area.**

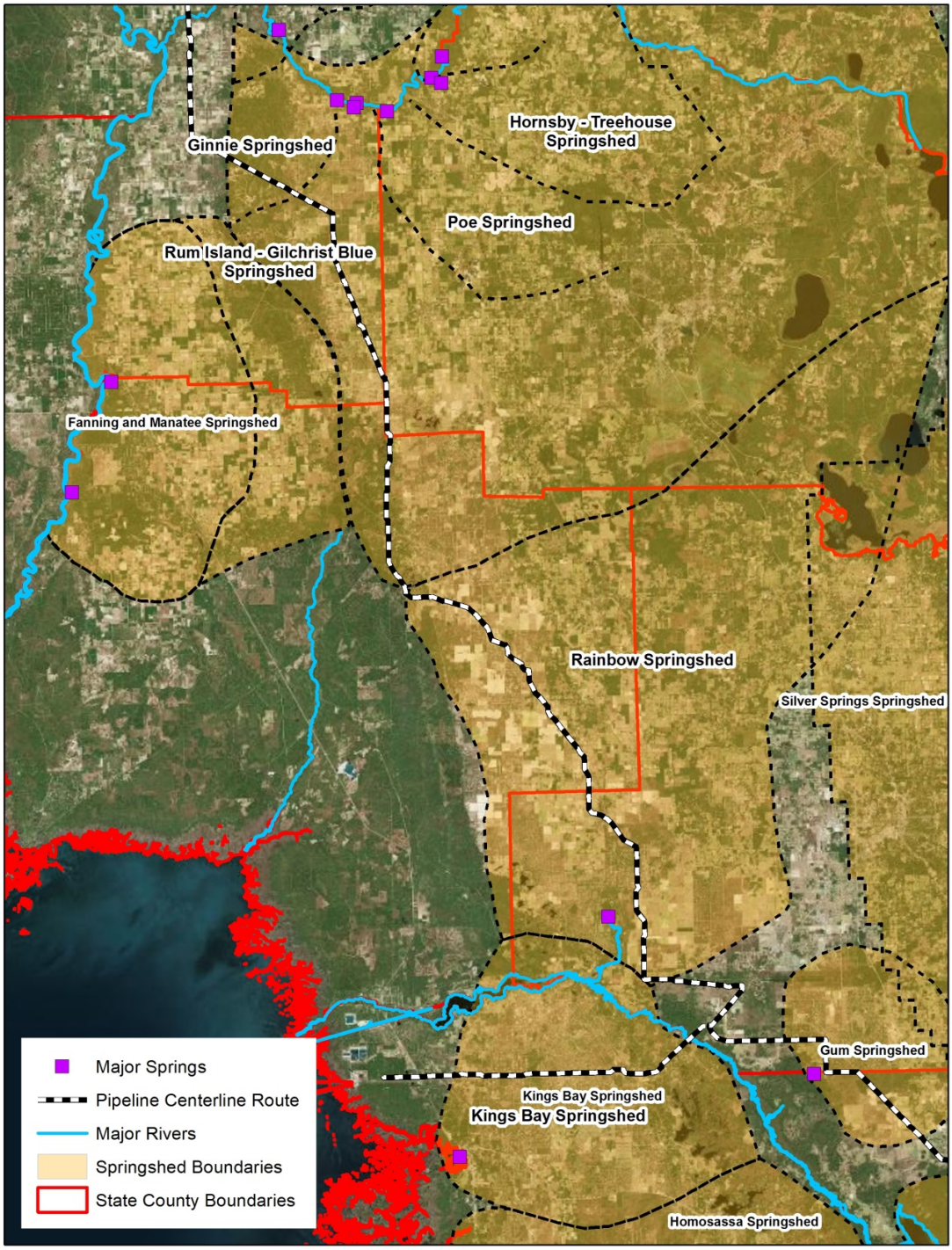

Figure 4. Approximate Springshed Boundaries of First Magnitude and Major Second Magnitude Springs in the Southern Portion of the Karst Sensitive Area.

Table 1. Distance from each Major Spring in a Springshed to the Route of the Proposed Pipeline at its Closest Approach to the Spring.

Spring Name	County	Closest Distance to the Pipeline within the Springshed (miles)
Madison Blue Spring	Madison	1.7
Royal Spring	Suwannee	8.0
Convict Spring	Lafayette	8.7
Troy Spring	Lafayette	8.1
Ichetucknee Spring	Suwannee	5.2
Sunbeam Spring	Columbia	4.9
Wilson Spring	Columbia	5.4
Ginnie Spring	Gilchrist	6.2
Santa Fe Rise Spring	Columbia	11.8
Hornsby Spring	Alachua	10.5
Treehouse Spring	Alachua	10.3
Poe Spring	Alachua	7.1
Rum Island Spring	Spring	6.7
Gilchrist Blue Spring	Spring	6.4
Fanning Spring	Levy	16.9
Manatee Spring	Levy	19.3
Rainbow Spring	Marion	1.8
Kings Bay Springs	Citrus	5.0 (Citrus County Line)
Gums Slough	Sumter	1.1

a great many of these. It is suggested that the closed depressions that the pipeline will actually intersect and large closed depression near the pipeline, should be assessed in the field by sinkhole experts to determine the degree that each feature could affect pipeline construction.

Fracture Traces - Photolinear analysis is a type of remote sensing analysis where linear features observable on aerial photographs or other remotely-sensed images are mapped. For linear features of geologic origin, lineaments are defined as those photolinear features greater than one mile in length, whereas fracture traces are the same type of feature having a total length of less than one mile. The fracture trace is the surface expression of the vertical zone of fracture concentration of the underlying limestone and the width of these zones can vary from a few to tens of meters. In general, longer lineaments tend to have wider surface expressions of the zone of fracture and wider zones of fracture concentration at greater depths. Zones of fracture concentration in soluble rocks such as limestone can lead to enhanced dissolution of these rocks due to accelerated chemical and physical weathering. In the case of rocks prone to karstification, the development of karst conduits begins when fracture apertures reach about one centimeter.

In Florida, fracture traces are detected and identified based primarily upon indicators such as aligned solution depressions, surface ponds, vegetation, variations in soil tone, and straight stream segments. Sinkhole development can be expected to follow orientation of fracture traces, as these represent areas of higher permeability and porosity.

A fracture trace analysis was conducted in the vicinity of the proposed pipeline route using aerial photographs from Hamilton (2010), Madison (2010) Suwannee (2010), Gilchrist (2010), Alachua (2011)

and Levy (2011) Counties. Fractures were identified by visually interpreting linear features that could indicate a fracture zone in the underlying limestone. Twenty-Nine fractures traces that appeared to be of significant scale and that crossed the proposed pipeline route were identified. These are shown in Figures 5 and 6 and listed in Table 2. Appendix B contains the aerial photographs upon which the fracture traces have been highlighted. Nearly all of the fractures are concentrated in the vicinity of the Cody Scarp in the Northern Portion of the Karst Sensitive Area as shown in Figures 5 and 6.

Where fracture traces cross the proposed pipeline route, an enhanced degree of caution should be exercised because these areas could be prone to subsidence during construction or sinkhole formation at some point in the future or could serve as pathways for sediment and contaminants to enter the Upper Floridan aquifer. However, it should be noted that fractures exist throughout the state of Florida and that construction activity in the vicinity of fracture traces is common. A higher degree of inspection during construction practices is required in these areas to ensure that those activities do not cause the impacts described above. Prior to construction, the intersections of the pipeline route and fracture traces should be inspected in the field and geophysical surveys should possibly be employed to assess the potential for subsidence or sinkhole formation.

1.3 Construction Activities

Trenching - Trenching for the installation of the pipeline is not anticipated to cause adverse impacts in the above mentioned springsheds and the Karst Sensitive Area. Trenching during pipeline construction will occur at a depth of approximately 6 to 7 feet below land surface throughout the Karst Sensitive Area. At that depth, construction activities will primarily occur in the sediments that overlie the limestone throughout most of the Karst Sensitive Area. This overburden consists mostly of unconsolidated clay, sand, and gravel that is a result of weathering of the limestone. It is therefore unlikely that trenching will interrupt or collapse major groundwater flow conduits, which tend to occur at significantly greater depths within the limestone.

Areas that may require additional monitoring during trenching include areas where the overburden has been completely eroded away and limestone exists at land surface, such as the vicinity of rivers. This also occurs nears springs but as shown in Table 1, the proposed pipeline route is no closer than approximately 1.1 miles to any major spring. Other sensitive areas include areas where the pipeline route is near large sinkholes or where fracture traces are crossed. The use of geotechnical borings and geophysical surveys in these areas to identify subsurface karst features that can be avoided or properly mitigated will reduce the risk of impacts to conduit flow channels that provide water for spring discharge.

The potential exists for small domestic supply wells in the vicinity of the pipeline route to be affected during construction. These affects would likely be related to increases in turbidity or sedimentation that would dissipate when construction was completed. Permanent damage to wells such as collapse of the well bore or decreases in yield would not be likely

Horizontal Directional Drilling – Appendix C contains data sources used to define groundwater flow paths to springs and wells downgradient of horizontal directional drill crossings for Alabama, Georgia, and Florida.

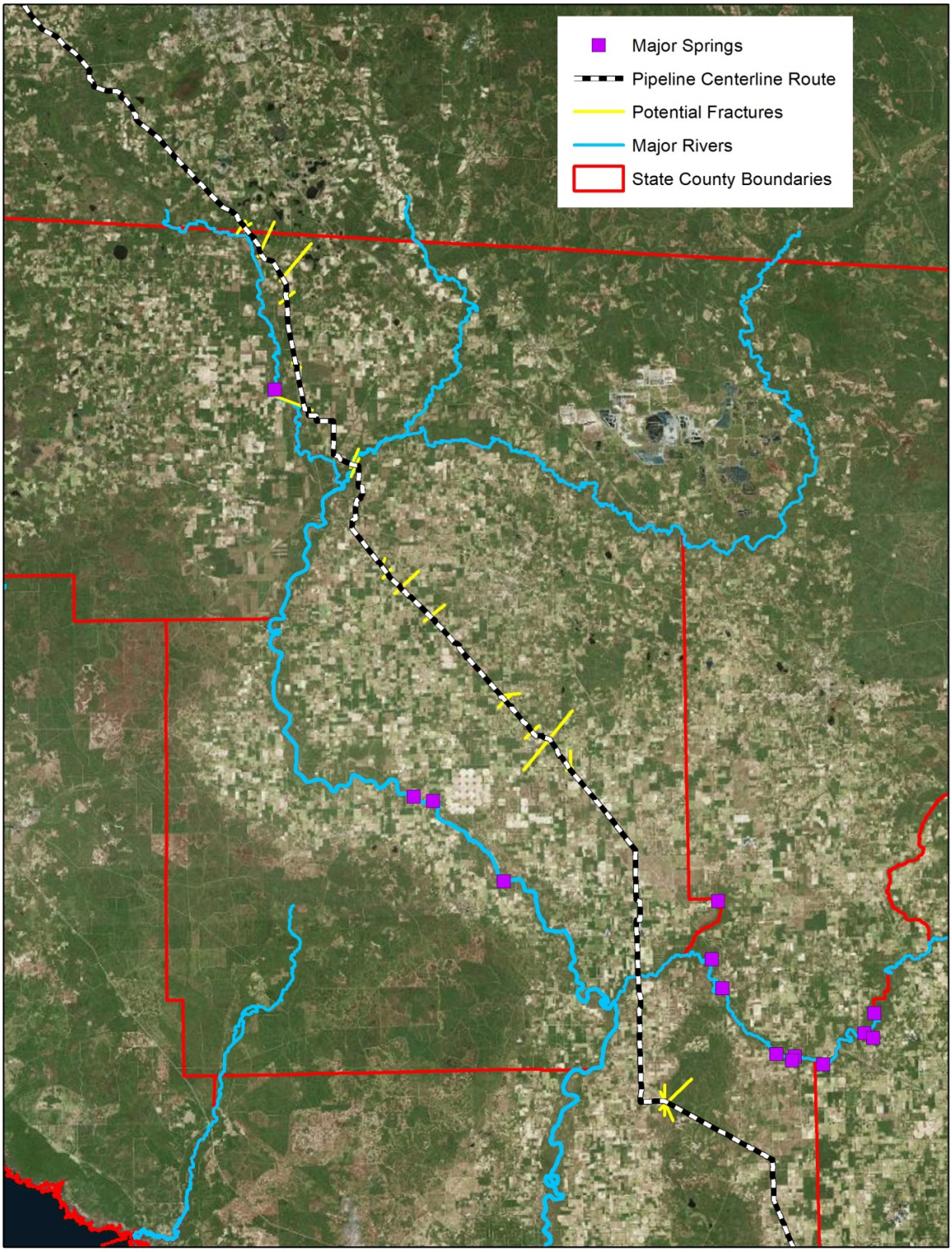

Figure 5. **Fracture Traces of Significant Size that Intersect the Proposed Pipeline Route in the Northern Portion of the Karst Sensitive Area.**

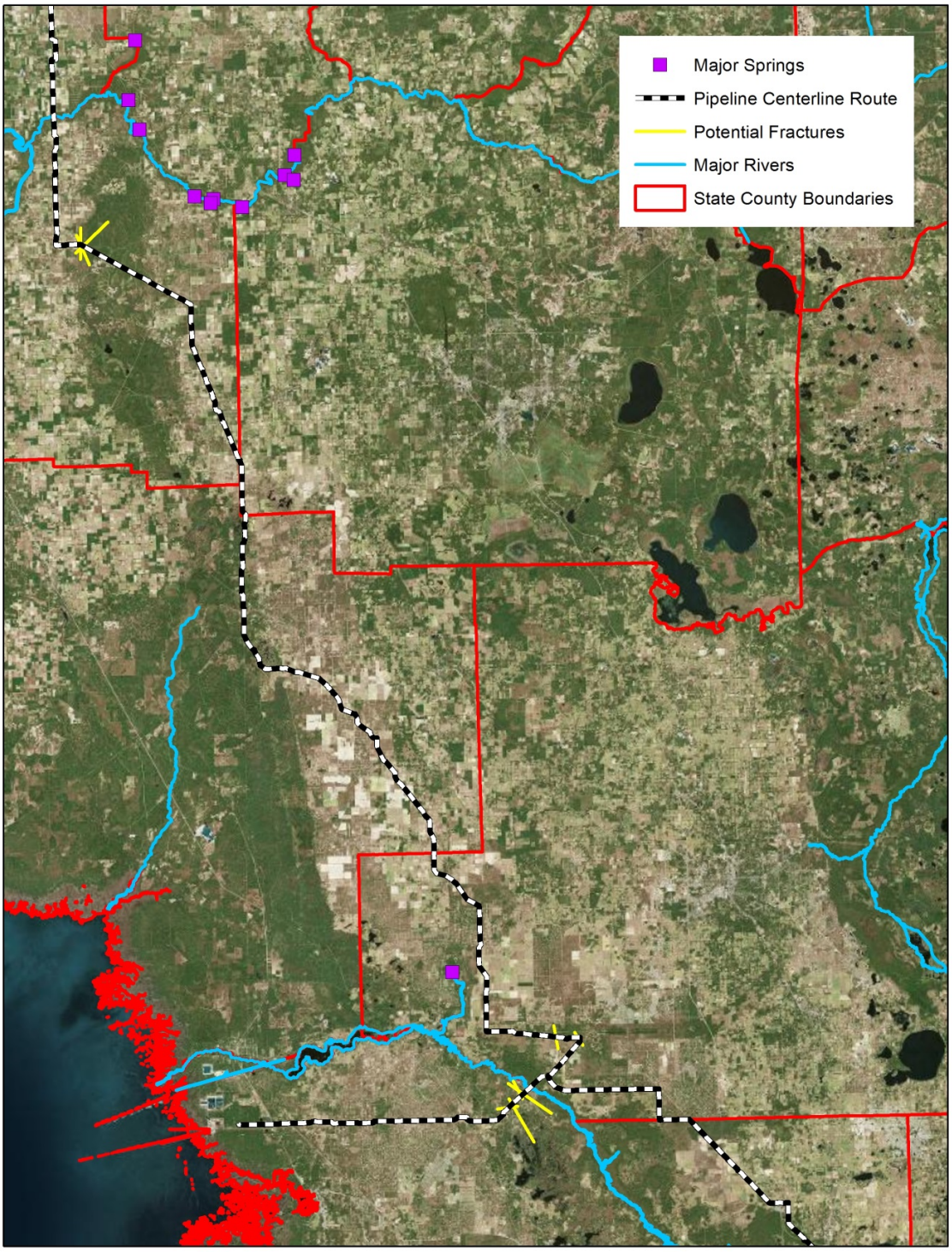

Figure 6. **Fracture Traces of Significant Size that Intersect the Proposed Pipeline Route in the Southern Portion of the Karst Sensitive Area.**

Table 2. Location of the Fracture Traces Relative to the Proposed Pipeline Route.

Potential Fracture ID	Mile Post
1	247.5
2	247.4
3	247.2
4	249.5
5	251.8
6	253.3
7	257.8
8	260.7
9	267.1
10	267.4
11	273.6
12	274.2
13	275.6
14	278.4
15	285.8
16	286.1
17	288.9
18	290.2
19	292.7
20	292.7
21	318.4
22	318.4
23	318.6
24	387.7
25	389.2
26	1.8 (Citrus County Line)
27	2.0 (Citrus County Line)
28	2.8 (Citrus County Line)
29	3.1 (Citrus County Line)

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Characterization of Karst Sensitive Areas Relative To the Proposed Route of the Sabal Trail Natural Gas Transmission Line

APPENDIX A

CLOSED DEPRESSION FEATURES WITHIN A 0.5 MILE WIDE PIPELINE CORRIDOR ENCOMPASSING THE PROPOSED PIPELINE ROUTE IN THE KARST SENSITIVE AREA

Appendix A Closed Depression Features Within A 0.5 Mile- Wide Pipeline Corridor Encompassing the Proposed Pipeline Route in the Karst Sensitive Area

Closed Depressional Features	Nearest Mile Post
1	244.7
1	245.2
3	245.8
3	245.9
3	246
2	246.2
5	246.3
6	246.7
3	246.8
1	246.9
2	247
3	247.3
2	247.4
1	247.5
2	247.6
1	247.7
2	247.8
1	248
5	248.4
1	248.6
1	248.7
1	249.2
1	249.6
1	249.7
2	249.8
1	250.1
1	250.2
1	250.4
1	250.6
2	250.7
1	250.9
2	251

Closed Depressional Features	Nearest Mile Post
3	251.2
1	251.3
2	251.4
1	251.5
1	251.6
1	251.8
1	251.9
1	252
1	252.1
1	252.3
1	252.5
3	252.6
1	252.7
2	252.9
4	253.2
1	253.4
2	254
2	254.3
2	254.5
1	254.6
1	254.8
1	255.1
1	255.5
1	255.7
1	255.9
1	256.2
1	256.3
1	256.5
1	256.7
1	257
1	257.1
1	257.7
1	257.9
1	258.1
2	258.2
2	258.3
1	258.4
3	258.6
3	258.8
2	259

Closed Depressional Features	Nearest Mile Post
1	259.1
1	259.2
1	259.6
1	259.7
2	259.8
4	259.9
1	260
1	260.7
1	260.8
1	261
2	261.1
1	261.5
3	261.7
1	261.9
1	262.1
4	262.4
1	262.9
1	263.4
1	263.5
2	263.7
1	264.1
1	264.3
1	264.4
1	264.5
1	264.6
1	264.8
2	264.9
1	265.1
1	265.4
1	265.6
1	265.7
1	265.9
1	266.7
2	266.9
5	267
4	267.1
5	267.2
1	267.4
1	267.8
1	267.9

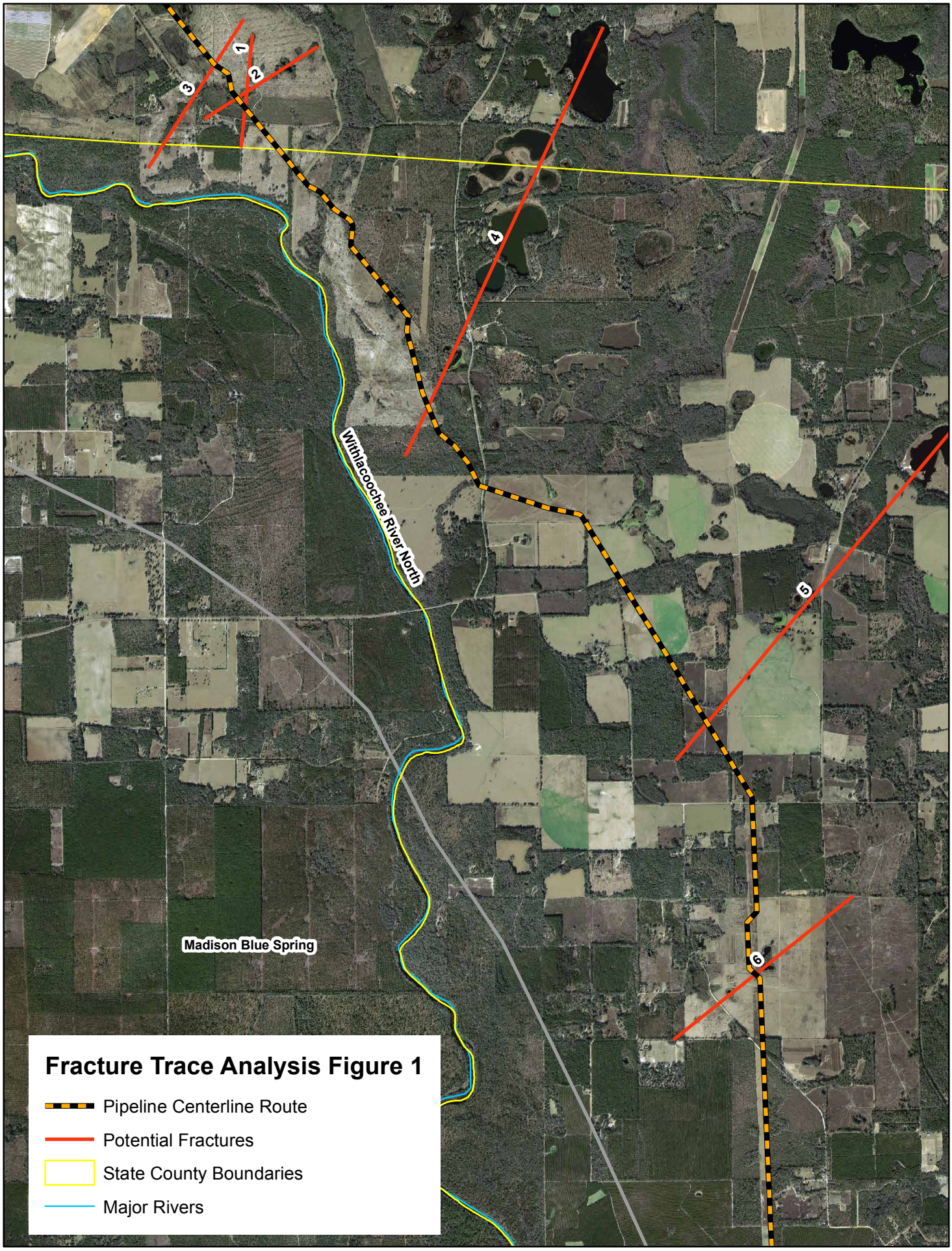
Closed Depressional Features	Nearest Mile Post
2	268.1
1	268.4
1	268.7
4	269
1	269.1
1	269.4
2	269.5
3	269.6
1	269.8
2	269.9
3	270
3	270.1
5	270.2
2	270.3
3	270.4
3	270.5
2	270.7
2	270.8
1	271
2	271.1
1	271.2
1	271.4
3	271.5
2	271.6
2	271.7
3	271.8
1	272.3
1	272.4
2	272.5
1	272.6
3	272.7
1	272.9
2	273
1	273.1
1	273.2
4	273.3
4	273.5
2	273.6
3	273.7
1	273.9

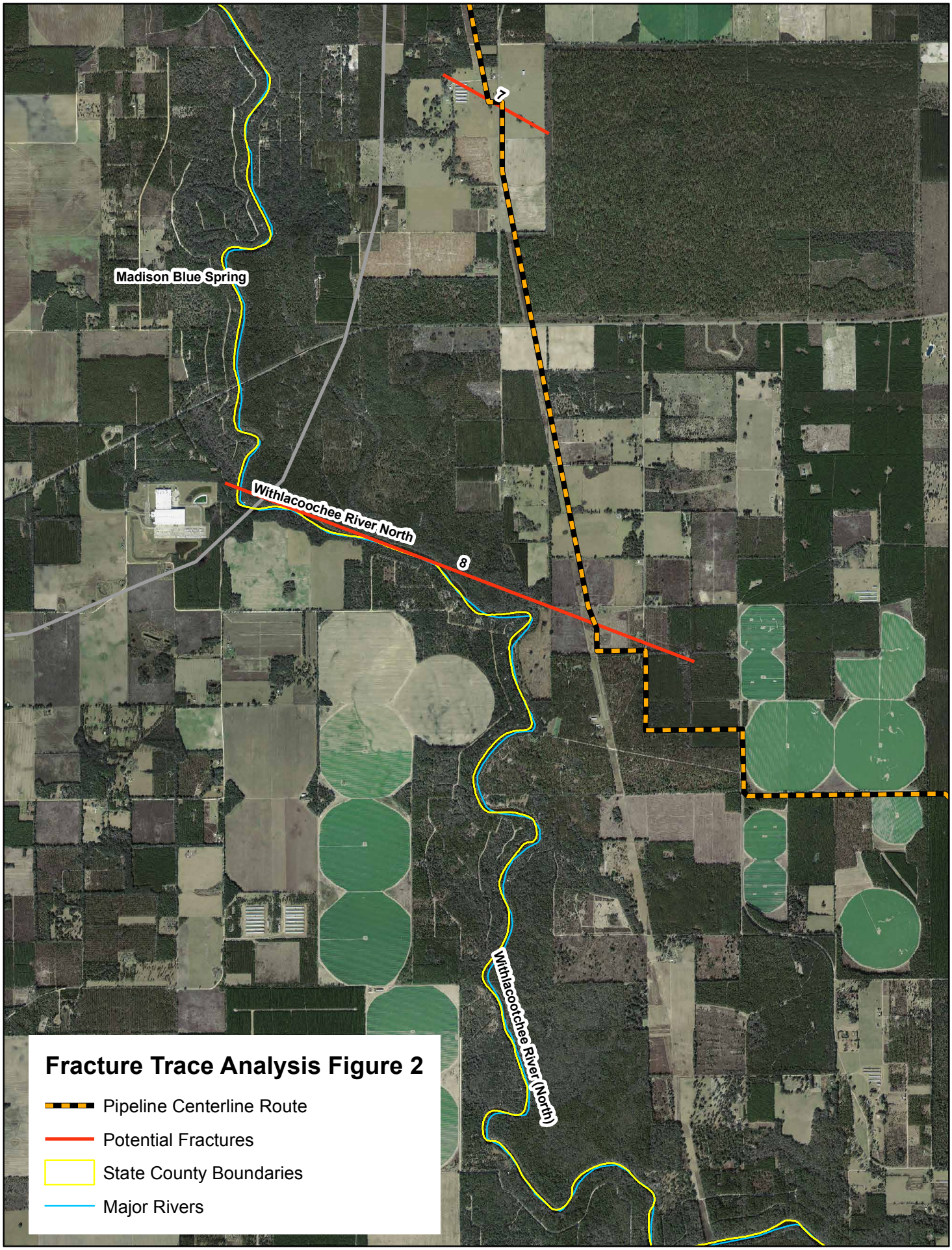
Closed Depressional Features	Nearest Mile Post
2	274
2	274.3
2	274.4
3	274.6
2	274.7
1	274.8
2	275
6	275.1
6	275.2
4	275.4
1	275.5
2	275.6
2	275.7
3	275.9
1	276
6	276.1
6	276.2
3	276.4
1	276.5
2	276.6
2	276.7
2	276.8
1	276.9

Characterization of Karst Sensitive Areas Relative To the Proposed Route of the Sabal Trail Natural Gas Transmission Line

APPENDIX B

AERIAL PHOTOGRAPHS SHOWING LOCATION OF MAJOR FRACTURE TRACES THAT INTERSECT THE PROPOSED PIPELINE ROUTE IN THE KARST SENSITIVE AREA


1
2
3
4
5
6
Withlacoochee River North
Madison Blue Spring
Fracture Trace Analysis Figure 1
Pipeline Centerline Route
Potential Fractures
State County Boundaries
Major Rivers


Madison Blue Spring
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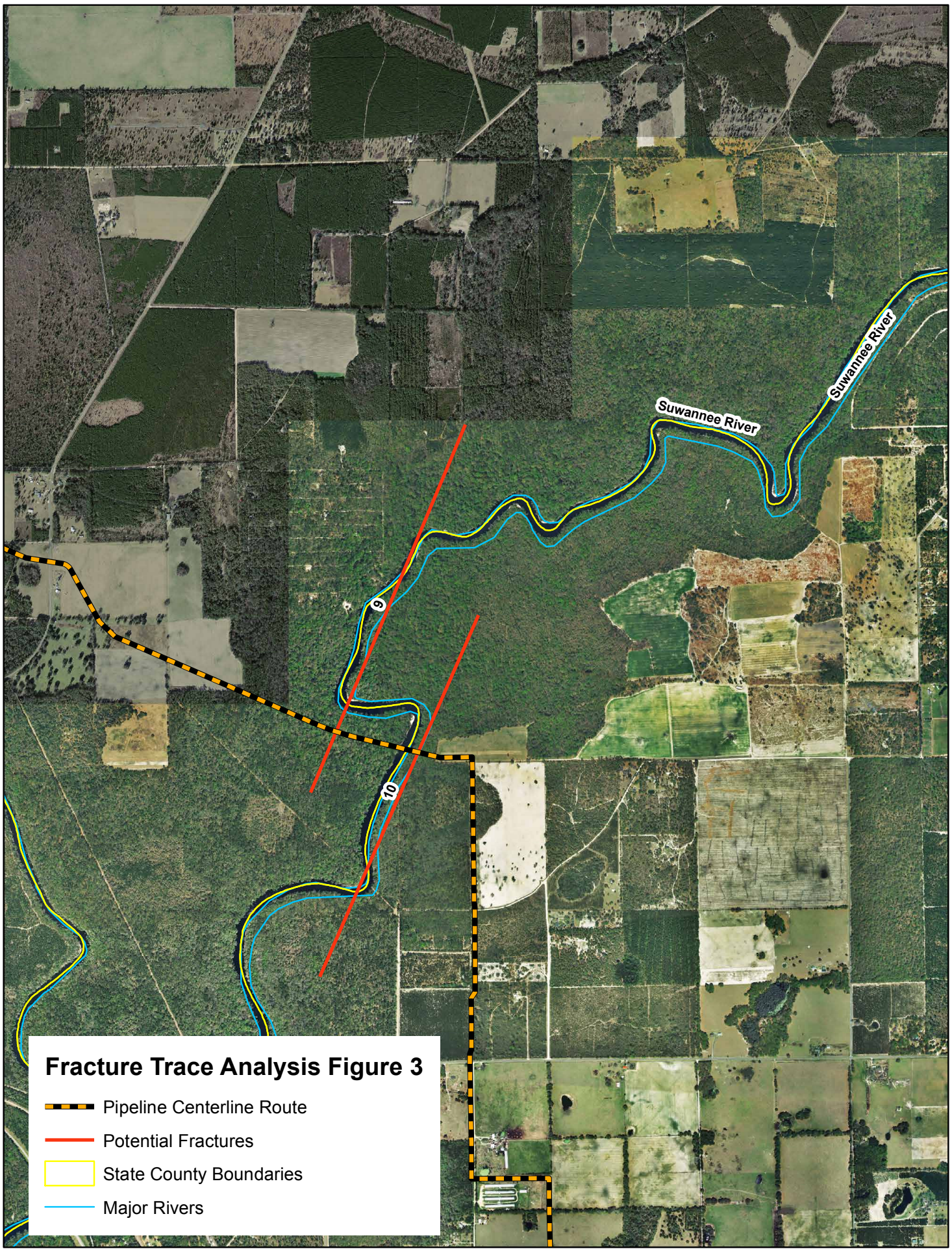
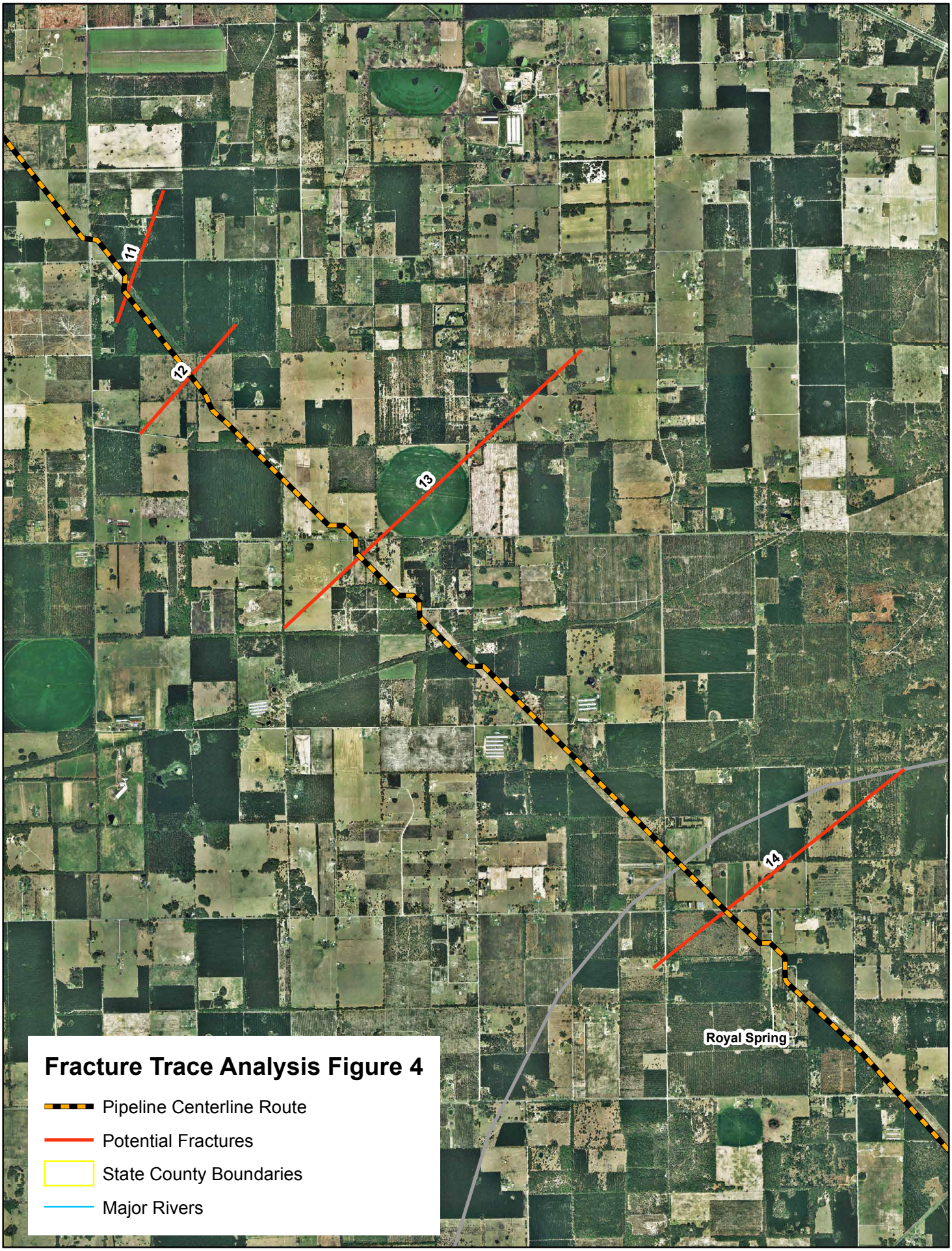
Withlacoochee River North
8
Withlacootchee River (North)
Fracture Trace Analysis Figure 2
Pipeline Centerline Route
Potential Fractures
State County Boundaries
Major Rivers


Suwannee River
Suwannee River
9
10
Fracture Trace Analysis Figure 3
Pipeline Centerline Route
Potential Fractures
State County Boundaries
Major Rivers


11
12
13
14
Royal Spring
Fracture Trace Analysis Figure 4
Pipeline Centerline Route
Potential Fractures
State County Boundaries
Major Rivers


Fracture Trace Analysis Figure 5
Pipeline Centerline Route
Potential Fractures
State County Boundaries
Major Rivers
15
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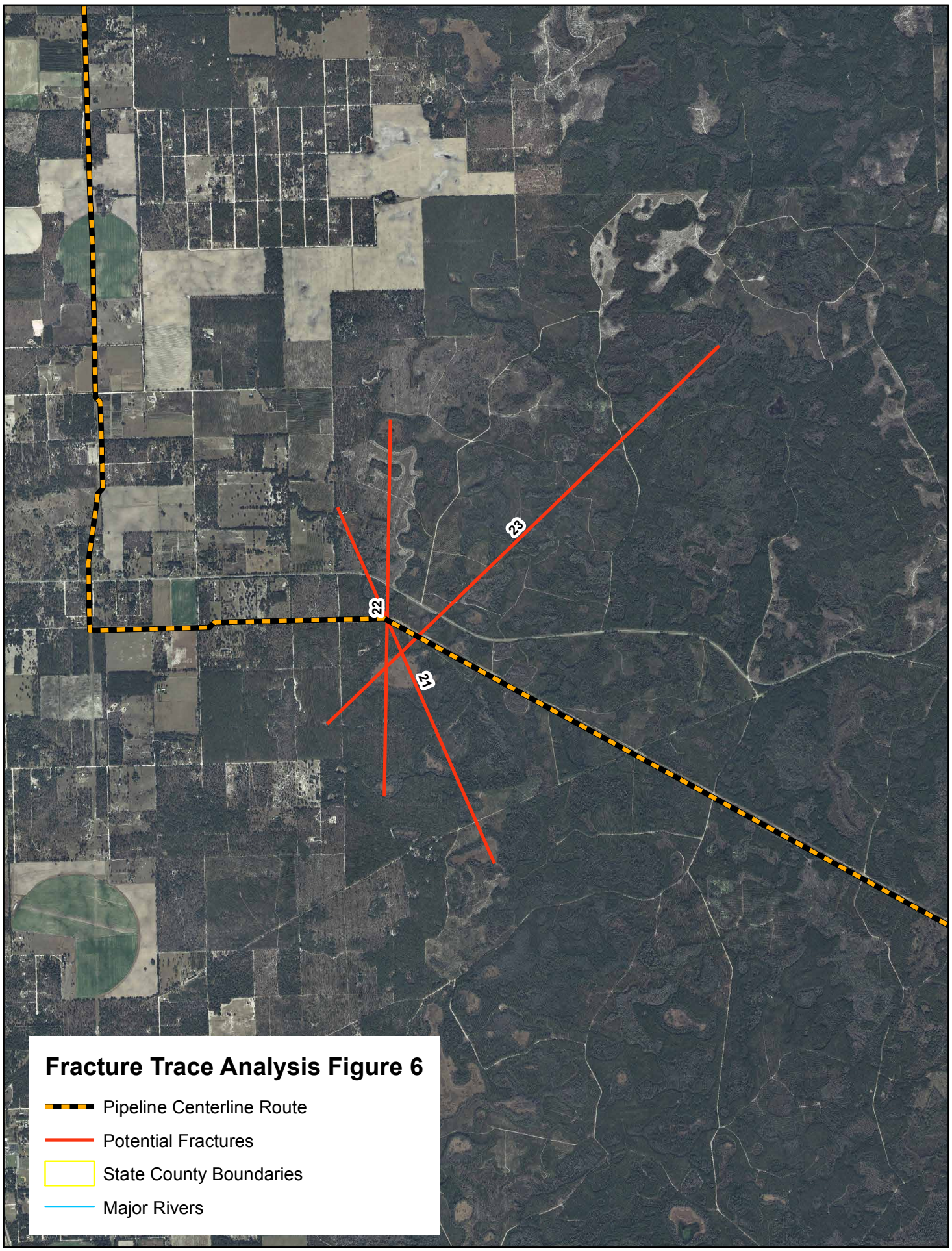
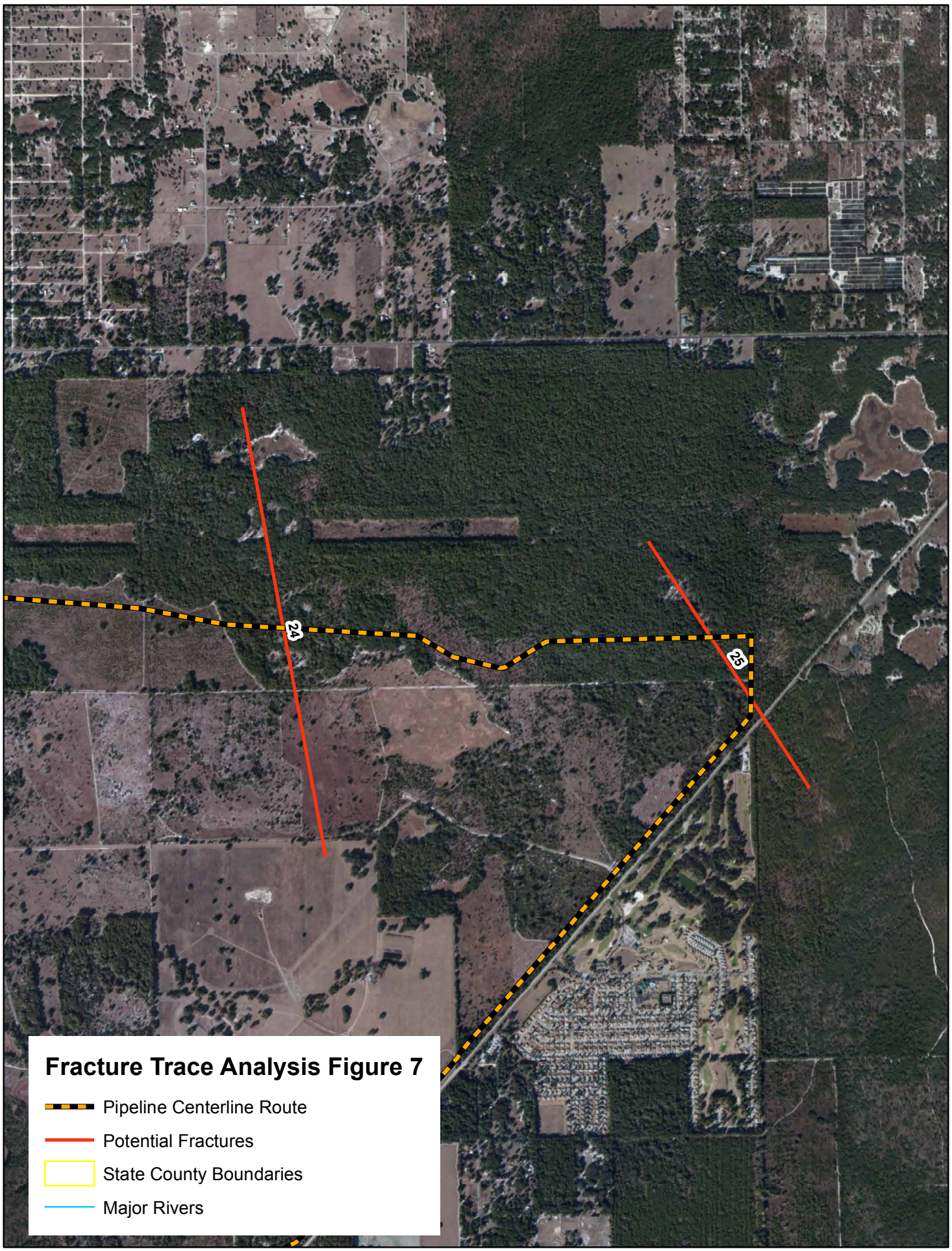
19
20


22
23
21
Fracture Trace Analysis Figure 6
Pipeline Centerline Route
Potential Fractures
State County Boundaries
Major Rivers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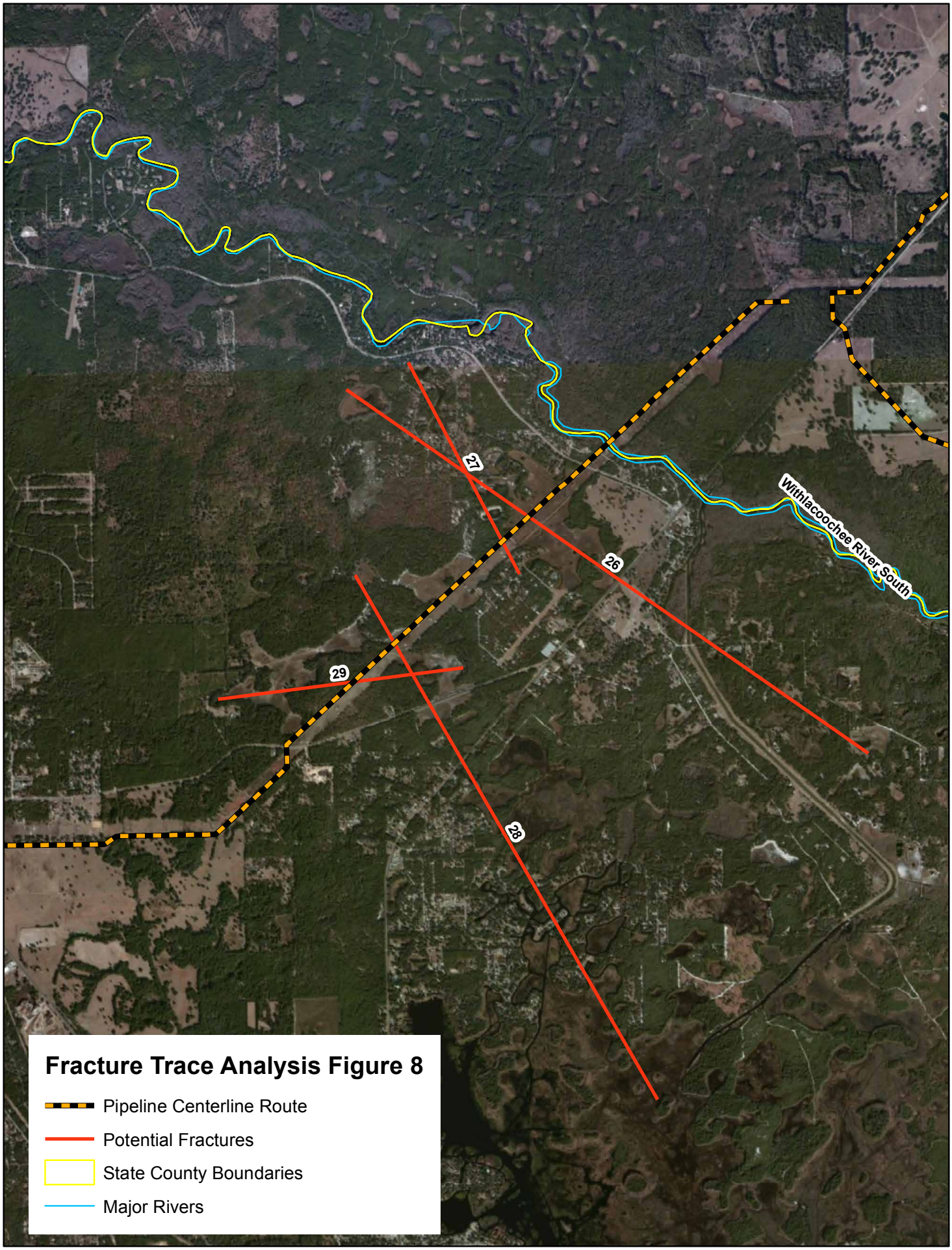
25
Fracture Trace Analysis Figure 7
Pipeline Centerline Route
Potential Fractures
State County Boundaries
Major Rivers


27
26
29
28
Withlacoochee River South
Fracture Trace Analysis Figure 8
Pipeline Centerline Route
Potential Fractures
State County Boundaries
Major Rivers

Characterization of Karst Sensitive Areas Relative To the Proposed Route of the Sabal Trail Natural Gas Transmission Line

APPENDIX C

DATA REFERENCES USED FOR DEFINING GROUNDWATER FLOW PATHS TO SPRINGS AND WELLS DOWNGRADIENT OF HDD CROSSINGS

Appendix C Available Data for Definition of Groundwater Flow Paths to Springs and Wells Downgradient of HDD Crossings by State

Alabama
According to the "Hydrogeology and Vulnerability to Contamination of Major Aquifers in Alabama: Area 5" created by the State of Alabama Geological Survey (2000) the aquifers in the vicinity of the proposed Sabal Trail pipeline are not conducive for public supply or groundwater withdrawals due to yields that average 15 - 50 gallons per minute. This area also does not have karst features due to the metamorphic geology of the area.

Georgia
Georgia Environmental Protection Division cannot publicly release the location of groundwater public supply wells; as such they do not have a shapefile for public use that details the location of groundwater wells.

United States Geological Survey, Potentiometric Surface of the Upper Floridan Aquifer in Florida Parts of Georgia, South Carolina and Alabama, May – June 2010 (http://pubs.usgs.gov/sim/3182/)

Florida
Southwest Florida Water Management District 2010 Upper Floridan aquifer potentiometric surface lines form the USGS September 2010 (http://www.swfwmd.state.fl.us/data/gis/layer_library/category/potmaps)

Southwest Florida Water Management District 2012 Water Use Permit Well Withdrawal Database (http://www.swfwmd.state.fl.us/data/gis/layer_library/category/regulatory)

Suwannee River Water Management District 2005 Upper Floridan aquifer potentiometric surface lines from May 2010 (http://www.srwmd.state.fl.us/index.aspx?NID=319)

Suwannee River Water Management District 2013 Water Use Permit Well Withdrawal Database (http://www.srwmd.state.fl.us/index.aspx?NID=319)

United States Geological Survey, Potentiometric Surface of the Upper Floridan Aquifer in Florida Parts of Georgia, South Carolina and Alabama, May – June 2010 (http://pubs.usgs.gov/sim/3182/)

South Florida Water Management District, Water Use Regulation Facility Site 2010 (http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=unq_id=1576)

APPENDIX I

HILLABEE EXPANSION PROJECT CONSTRUCTION SPILL PLAN
FOR OIL AND HAZARDOUS MATERIALS

SABAL TRAIL PROJECT SPILL PREVENTION CONTROL
AND COUNTERMEASURE PLAN

FLORIDA SOUTHEAST CONNECTION PROJECT
SPILL PREVENTION AND CONTROL PLAN

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

CONSTRUCTION SPILL PLAN FOR OIL AND HAZARDOUS MATERIALS

HILLABEE EXPANSION PROJECT

FERC DOCKET NO. CF15-16-000

PUBLIC

April 2015

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Acronyms

CBMPP	Construction Best Management Practices Plan
CFR	Code of Federal Regulations
CI	Chief Inspector
DM	District Manager
DOT	United States Department of Transportation
dt/day	Dekatherms per day
EC	Emergency Coordinator
EPA	United States Environmental Protection Agency
LEPC	Local Emergency Planning Committee
MP	Milepost
PPE	personal protection equipment
Project	Hillabee Expansion Project
Sabal Trail	Sabal Trail Transmission, LLC
SPCC	Spill Prevention Control and Countermeasure Plan
Spill Plan	Construction Spill Plan for Oil and Hazardous Materials
TBD	To be determined
Transco	Transcontinental Gas Pipeline Company, LLC

1.0 General Information

1.1 Project Location and Description

Transcontinental Gas Pipe Line Company, LLC (Transco) is proposing an expansion of its existing natural gas transmission system in Alabama herein referred to as the Hillabee Expansion Project or Project. The Hillabee Expansion Project will enable Transco to provide 1,131,730 dekatherms per day (dt/day) of incremental firm capacity for lease, over three phases, to Sabal Trail Transmission, LLC (Sabal Trail). Sabal Trail will lease 100 percent of the capacity provided under Transco's Hillabee Expansion Project as part of its Sabal Trail Project. As requested by Sabal Trail, the Project will provide 818,410 dt/d of capacity commencing May 2017 (Phase 1), 206,660 dt/d of capacity commencing May 2020 (Phase 2), and the remaining 106,660 dt/d of capacity commencing May 2021 (Phase 3).

The following background is provided for facilities described in this report.

Transco's Mainline starts at milepost (MP) 78.89 north of Harlingen, Texas, and runs northeasterly to New York City for a distance of some 1,775 miles. Up to five lines, "A" through "E", comprise this Mainline system. Mainline "A" was constructed in 1949 and "B" was constructed in 1951. Lines "C" through "E" are still being constructed in segments as the market dictates.

Figure 1.1-1 provides a general overview of facilities proposed as part of this Project. As shown, the Project includes the following components:

Phase 1 (Target in-service of 2017):

- Addition of approximately 36,500 horsepower (hp) at two of Transco's existing compressor stations, through the installation of new gas turbine driven compressor packages
  - 16,000 hp at Compressor Station 95 in Dallas County, Alabama; and
  - 20,500 hp at Compressor Station 105 in Coosa County, Alabama.
- Re-wheeling of two existing compressors at Transco's Compressor Station 95 in Dallas County, Alabama.
- A new 32,000 hp gas turbine driven compressor station (Compressor Station 84) in Choctaw County, Alabama.
- Approximately 15.40 miles of 42-inch diameter pipeline in three loops in Coosa and Tallapoosa Counties, Alabama:
  - Proctor Creek Loop – 5.31 miles in Coosa County, Alabama from milepost (MP) 911.12 to MP 916.45;
  - Hissop Loop – 2.55 miles in Coosa County, Alabama from MP 924.27 to MP 926.85; and
  - Alexander City Loop – 7.54 miles in Tallapoosa County, Alabama from MP 941.83 to MP 949.38.
- Approximately 4.66 miles of 48-inch diameter pipeline loop in Autauga and Chilton Counties, Alabama:
  - Billingsley Loop – 4.66 miles in Autauga and Chilton Counties, Alabama from MP 885.95 to MP 890.55;
- Three pipeline taps for the Sabal Trail meter station; and

- Appurtenant underground and aboveground facilities.

Phase 2 (Target in-service of 2020):

- Addition of approximately 20,000 hp at two of Transco's compressor stations, including the installation of a new gas turbine driven compressor package and uprating of an existing electric driven compressor package:
    - Additional 16,000 hp gas turbine driven compressor at Compressor Station 95 in Dallas County, Alabama; and
    - 4,000 hp uprate of existing motor driven compressor at Compressor Station 100 in Chilton County, Alabama.
- Re-wheeling of three existing compressors at Transco's existing Compressor Station 95 in Dallas County, Alabama.
- Approximately 10.63 miles of 42-inch diameter pipeline in two loops in Choctaw and Chilton Counties, Alabama:
    - Rock Springs Loop – 6.73 miles in Choctaw County, Alabama from MP 784.68 to MP 791.40; and
    - Verbena Loop – 3.90 miles in Chilton County, Alabama from MP 905.72 to MP 909.65.
- Appurtenant underground and aboveground facilities.

Phase 3 (Target in service of 2021):

- Re-wheeling of an existing compressor at Transco's Compressor Station 100 in Chilton County, Alabama.
- Approximately 12.82 miles of 42-inch diameter pipeline in two loops in Choctaw, Chilton and Autauga Counties, Alabama:
    - Butler Loop – 5.34 miles in Choctaw County, Alabama from MP 791.40 to MP 796.70; and
    - Autauga Loop – 7.48 miles in Autauga and Chilton Counties, Alabama from MP 890.67 to MP 898.15.
- Appurtenant underground and aboveground facilities.

If the Project qualifies as a United States Environmental Protection Agency (EPA) Tier I Facility, a Spill Prevention Control and Countermeasure Plan (SPCC) will be prepared by a contractor responsible for meeting EPA Tier I Facility requirement thresholds.

1.2 Definitions

Oil is defined in the SPCC regulations as oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil and oily mixtures.

Hazardous Material as defined by the United States Department of Transportation (DOT) includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 Code of Federal Regulations [CFR] 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of subchapter C of this chapter. Hazardous materials typically found on construction projects include, but are not limited to, petroleum oils, hydraulic fluids, engine coolants (ethylene glycol), x-ray film developer, chemical additives, pipe coatings, used abrasive blasting media, etc.

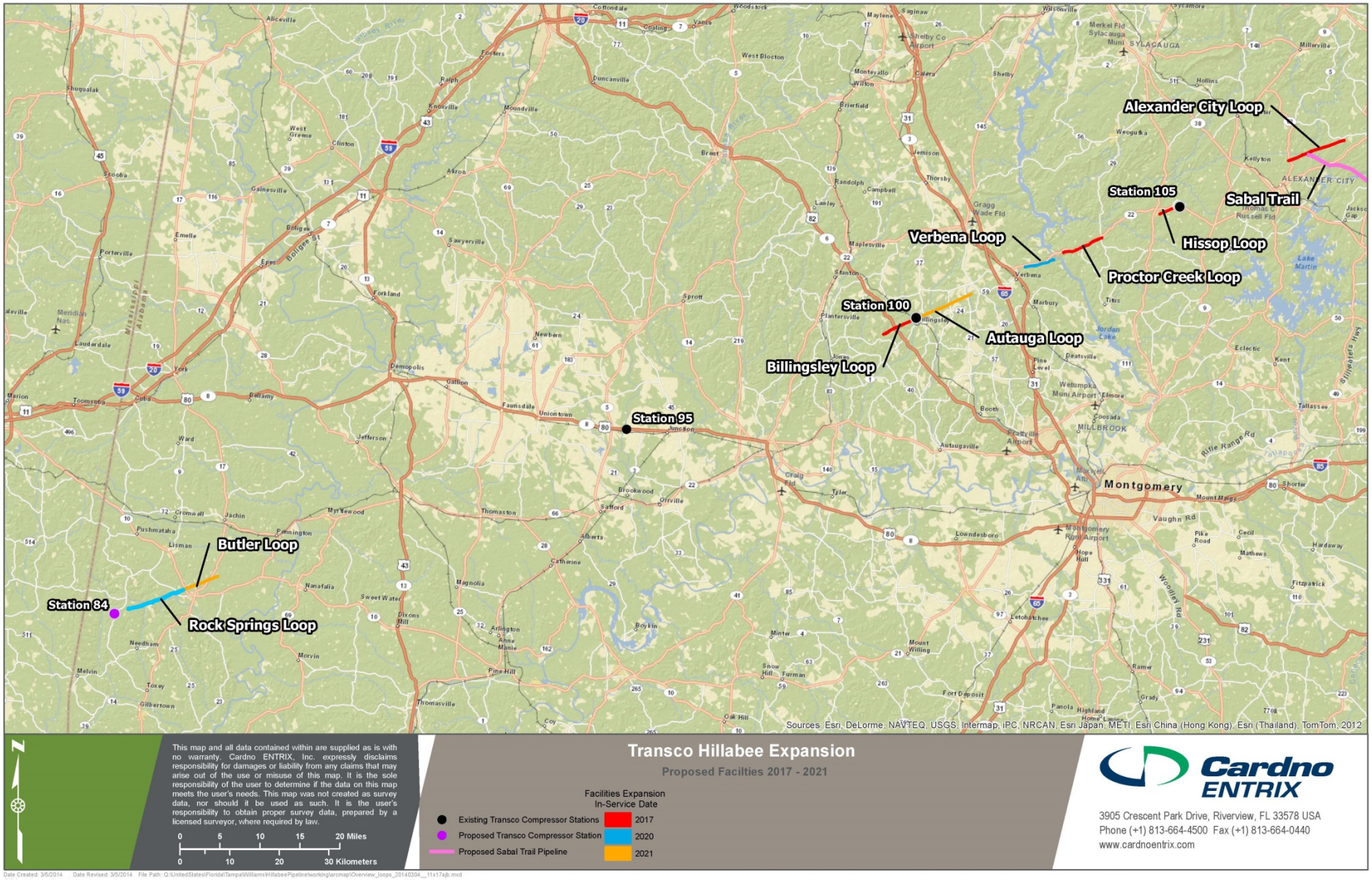
1.3 Contractor Responsibility

The Contractor shall be familiar with this Construction Spill Plan for Oil and Hazardous Materials (Spill Plan) and its contents prior to commencing any construction-related activities. This Spill Plan will be followed to prevent any spills that may occur during the project and to mitigate any spills that do occur.

Company representatives assigned to this project include:

District Manager (DM):	*Larry Hasty (District 90) / Patrick Aman (District 100)*
Chief Inspector (CI):	*To Be Determined (TBD)*
Environmental Compliance:	*Tim Perdue*
Environmental Permitting	*Karen Olson*

Figure 1.1-1 – General Project Location



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2.0 Drainage Patterns and Spill Prevention Practices

2.1 Drainage Patterns

Responsibility: Chief Inspector/District Manager

Construction and operations personnel will be familiar with drainage patterns for the project as depicted in Transco's Construction Best Management Practices Plan (CBMPP) and be prepared to implement measures to control any release.

2.2 Spill Prevention Practices

The Contractor shall take the following precautions to ensure that an oil or hazardous materials spill does not occur:

2.2.1 Containers

1. All containers shall be stored on level ground at least 100 feet from any waterway, or as prescribed by a project specific permit. All containers should be located within temporary containment.
2. Temporary containment will include, but not be limited to, temporary hay bale berms with plastic sheets underlining the entire contained area.
3. Containment areas shall be capable of containing 110% of the volume of the single largest container of hazardous material being stored.
4. All container storage areas shall be routinely inspected for integrity purposes.
5. Leaking and/or deteriorated containers shall be replaced as soon as the condition is first detected with clean-up measures immediately taking place.
6. No incompatible materials shall be stored in the same containment area.
7. No container storage areas shall be left unsecured during non-work hours.
8. Accumulated rainwater in the containment areas must be inspected prior to release to the ground; it must be free of sheens or other hazardous materials.

2.2.2 Tanks

1. The Contractor shall operate only those tanks that meet the requirements and specifications of applicable regulations and that are surrounded with temporary containment as described above.
2. Self-supporting tanks shall be constructed of materials compatible with its contents.
3. All tanks shall be routinely inspected for integrity purposes.
4. Vehicle mounted tanks shall be equipped with flame/spark arrestors on vents to ensure that self-ignition does not occur.
5. Tanks will not be used to store incompatible materials in sequence unless first thoroughly decontaminated.
6. Any tank utilized for storing different products between construction locations will be thoroughly decontaminated prior to refilling.

2.2.3 Unloading/Loading Areas

1. If it is necessary during the Project, re-fueling and transferring of liquids shall only occur in pre-designated locations that are on level ground and at least 100 feet from any waterway. Where conditions require construction equipment (e.g., Bobcat/front-end loader/excavator) be re-fueled within 100 feet of any waterway, or as prescribed by a project-specific permit, this activity must be continuously manned to ensure that overfilling, leaks, or spills do not occur. In addition, all this equipment must be surrounded by
2. All service vehicles used to transport fuel must be equipped with an appropriate number of fire extinguishers and an oil spill response kit. At a minimum, this kit must include:
    a. Ten, 48-inch by 3-inch oil socks
    b. Five, 18-inch by 18-inch oil pillows
    c. One, 10-foot by 3-inch oil boom
    d. Twenty-five, 24-inch by 24-inch oil mats/pads
    e. One box garden-size, 6-mil, disposable polyethylene bags (w/ ties)
    f. Four pairs of oil-proof gloves
    g. One, 55-gallon PE open-head drum
    h. Blank drum labels
    i. Two shovels

3.0 Emergency Response Procedures

This section provides a generic description of emergency response procedures to be performed to address oil and hazardous materials spills at the job site. Each response will vary depending upon the nature and extent of the incident. However, the general procedures outlined below will be followed.

3.1 Contractor Responsibilities

1. The Contractor must designate both an Emergency Coordinator (EC) and an Alternate EC for the project.

2. The Contractor is responsible for appropriately addressing all spills that occur directly as a result of construction-related activities.

3. For spills (spills that take less than a shovel-full of dirt to clean-up), no internal notification requirements of this Plan need to be followed. However, this does not relieve the Contractor from appropriately remediating the area and reporting the spill in the daily report.

4. The Contractor shall supply the necessary manpower, personal protective equipment (PPE), and spill response equipment to appropriately address all spills that directly occur as a result of construction-related activities.

5. Ensure that all emergency spill response equipment and PPE is well-stocked and in good condition. Replace used materials when necessary.

6. If the situation warrants it, the Contractor shall immediately notify any local emergency spill response contractors for assistance.

7. The Contractor shall be responsible for hiring an emergency spill response contractor if the nature of the incident requires it.

8. The Contractor is responsible for immediately notifying the CI (or the DM) of any reportable spills.

3.2 Company Responsibilities

1. The Company shall be responsible for ensuring that the Contractor adequately follows the procedures outlined in this Plan at all times.

2. The Company shall be responsible for all verbal and written external notifications made to any regulatory agency or any local emergency responders.

3.3 Emergency contacts

Appendix A provides a list of Company and Contractor emergency contacts.

3.4 Duties of Chief Inspector or District Manager

The duties of the CI (or DM) for reportable spills include the following:

1. Determine the source, character, amount, and extent of the spill.
2. Assess the potential hazards to the job site, environment, and surrounding community and contact the Safety Representative if any hazards are detected.

3. Evacuate the area if necessary.
4. Report the spill in accordance with the internal notification procedures outlined in Section 5.1 and the external notification procedures outlined in Section 5.2.
5. Commit manpower and equipment for minor incidents that can be reasonably remediated by the Contractor.
6. Oversee Contractor's spill response efforts to contain and control all spills to ensure they adequately follow the procedures outlined in this Plan.
7. Document the Contractor's response effort, including taking photographs wherever possible.
8. Generate an Emergency Incident Report (form WGP-0187).

3.5 Natural Disasters

The Hillabee Project is located outside of the Federal Emergency Management Agency (FEMA) designated hurricane susceptible zone (FEMA, 2015), however hurricanes and tropical storms could still bring high winds and large volumes of precipitation to the Project area. The Project is also located in an area susceptible to severe weather events producing tornadoes.

The hurricane season extends from June 1 through November 30 and advanced warning is typically accessible. Severe weather events producing tornadoes can occur swiftly and with little warning. In the event that severe weather is forecasted for the Project area, the District Manager and/or Chief Inspector will notify the contractor to prepare for potential inclement weather by alerting all field personnel and contractors of the forecasted weather conditions and conducting an assessment of the materials and equipment needed to safely move or secure hazardous materials. At this time, the contractor will identify locations where equipment and storage tanks and containers could be relocated, if necessary. In addition, the following preparation measures will be implemented:

1. Remove or secure all equipment in the work area containing fuels, lubricants, and fluids that could be affected by high wind and/or flooding.
2. Remove or secure all temporary storage tanks and containers.
3. Document locations and volumes of all secured storage tanks and containers.

Once it is safe to do so, personnel will return to the Project area and the District Manager, Chief Inspector, and the contractor will assess the construction areas to determine if any spill response measures are necessary. Spill notification and response procedures (Sections 5.0 and 6.0, respectively), will be followed as necessary.

4.0 Emergency Spill Response and Personnel Protection Equipment

Appendix B provides a list of the minimally required emergency spill response equipment and PPE for this Project. This is in addition to the minimally required spill response equipment previously specified in Section 2.2.

5.0 Spill Notification Procedures

5.1 Internal Notifications

1. All spills are to be immediately reported to the CI (or DM) who will immediately contact the Gas Control and the Environmental Compliance Department. Appendix A includes a list of emergency contacts.
2. Gas Control is responsible for notifying the Environmental Compliance Department, as specified in the "Significant Event Notification Plan" and the Spill Plan.
3. The CI (or DM) is responsible for completing form WGP-0187, "Emergency Incident Report," and forwarding it to the Environmental Compliance Department in a timely manner. .

5.2 External Notifications

1. Gas Control shall make all required "Immediate Notifications" to regulatory agencies.
2. The CI (or DM) is responsible for any necessary first-response notifications to an emergency spill response team to help contain the spill.
3. After all required immediate notifications are made by Gas Control, the Environmental Compliance Department shall use the information from the completed form WGP-0187 to make any necessary subsequent verbal and written notifications to regulatory agencies.
4. If a spill poses a threat to human health or the environment, Gas Control shall immediately contact the Local Emergency Planning Committee (LEPC). When determining if the LEPC should be contacted or not, any gas release to the atmosphere must be taken into consideration. Note: Linear Projects may extend through multiple LEPC jurisdictions. As a result, all jurisdictions must be listed below.

The appropriate LEPC is:

Table 5.2-1 – LEPCs for the Hillabee Expansion Project

Project Facilities	
Name:	**Choctaw County, Alabama – Jimmy Cowan**
Organization:	Choctaw County Emergency Management Agency
Phone Number:	205-459-2153
Name:	**Dallas County, Alabama – Rhonda Abbott**
Organization:	Dallas County Emergency Management
Phone Number:	334-874-2515
Name:	**Autauga County, Alabama – Ernie Baggett**
Organization:	Autauga County Emergency Management Agency
Phone Number:	334-361-3758
Name:	**Chilton County, Alabama – Bill Collum**
Organization:	Chilton County Emergency Management Agency
Phone Number:	205-755-0900

Table 5.2-1 – LEPCs for the Hillabee Expansion Project

Project Facilities	
Name:	**Coosa County, Alabama – Lester Sellers**
Organization:	Coosa County Emergency Management Agency
Phone Number:	256-377-2418
Name:	**Tallapoosa County, Alabama – Joe Paul Boone**
Organization:	Tallapoosa County Emergency Management Agency
Phone Number:	256-825-1078

5.3 Emergency Spill Response Contractors

The Company has arrangements with several emergency spill response contractors to address emergency responses beyond the capabilities of the Contractor. If necessary, the following firms could be utilized for this project:

Company:	PSC Emergency Response
Location:	*24-hour Nationwide*
Phone Number:	(877) 577-2669

Company:	*Witt O'Brien's*
Location:	Slidell, Louisiana
Phone Number:	(985) 781-0804

5.4 Local Emergency Responders

The Contractor or the CI (or DM) may call the following local emergency responders should their assistance be required:

Table 5.4.1 – Local Emergency Responders

Service	Telephone Number
Choctaw County, Alabama	
Emergency Medical Services	Choctaw Emergency Medical Services 816 W Pushmataha St Butler, AL 205-459-3824

Table 5.4.1 – Local Emergency Responders

Service	Telephone Number
Hospital	Choctaw General Hospital 410 Vanity Fair Ave Butler, AL 36904 205-459-9100
Fire	Butler Fire Department 213 N Hamburg Ave Butler, AL 205-459-3793
Police	Butler Police Department 114 N Academy Ave Butler, AL 205-459-3794
Dallas County, Alabama	
Emergency Medical Services	Amstar Emergency Medical Services 1401 N Main St Linden, AL 334-295-4450
Hospital	Vaughan Regional Medical Center 1015 Medical Center Parkway Selma, AL 36701 334-418-4100
Fire	Uniontown City Fire Department 100 Front St Uniontown, AL 36786 334-628-6642
Police	Uniontown Police Department 100 Front St Uniontown, AL 36786 334-628-4021
Autauga County, Alabama	
Emergency Medical Services	Chilton Medical Center 1010 Lay Dam Road Clanton, Alabama 35045 205-280-3218
Hospital	Prattville Baptist Hospital 124 South Memorial Drive Prattville, AL 36067 334-365-0651

Table 5.4.1 – Local Emergency Responders

Service	Telephone Number
Fire	City of Northport Fire Station Alabama 6 AL 35401 205-752-3151
Police	Autauga County Sheriff's Office 162 West 4th Street Prattville, AL 36067 334-361-2500
Chilton County, Alabama	
Emergency Medical Services	Chilton Medical Center 1010 Lay Dam Road Clanton, Alabama 35045 205-280-3218
Hospital	Chilton Medical Center 1010 Lay Dam Road Clanton, Alabama 35045 205-755-2500
Fire	Enterprise Volunteer Fire Department 6162 County Road 24 Verbena, AL 36091 205-755-8400
Police	Clanton Police Department 501 2nd Avenue North Clanton, AL 35045 205-755-1120
Coosa County, Alabama	
Emergency Medical Services	Haynes Ambulance 510 Hospital Drive Wetumpka, AL 36092 334-514-7911
Hospital	Elmore Community Hospital 500 Hospital Drive Wetumpka, AL 36092 334-567-4311
Fire	Rockford Fire Department 9688 US Highway 31 Rockford, AL 256-377-4911

Table 5.4.1 – Local Emergency Responders

Service	Telephone Number
Police	Coosa County Sheriff Office 296 School Street Rockford, AL 35136 256-377-1803
Tallapoosa County, Alabama	
Emergency Medical Services	Tallapoosa EMS 201 Mariarden Road Dadeville, AL 36853 256-825-9811
Hospital	Russell Medical Center 3316 Highway 280 Alexander City, AL 35010 256-329-7100
Fire	Alexander City Fire Department 38 Court Sq. Alexander City, AL 256-329-6781
Police	Alexander City Police Department 1 Court Sq. Alexander City, AL 256-234-3421

6.0 Clean Up Procedures

The following section outlines specific procedures to be followed when addressing spills.

6.1 Spills

1. Small spills and leaks must be remediated as soon as feasible. Use adsorbent pads wherever possible.
2. Restrict spills to the containment area if possible by stopping or diverting flow.
3. If the spill exceeds the containment structure's capacity, immediately construct additional containment using sandbags or fill material. Every effort must be made to prevent the spills from entering a water body.
4. If a spill reaches a water body, immediately place oil booms downstream in order to contain the material. As soon as possible, remove the floating layer with absorbent pads.
5. After all recoverable oil has been collected and drummed, place all contaminated PPE, spill clean-up equipment, and any impacted soil into appropriate containers.
6. For significant quantities of impacted soils, construct temporary waste piles using plastic sheets. This material should subsequently be transferred into lined roll-off boxes as soon as feasible.
7. The Environmental Compliance Department will coordinate all waste characterization, profiling, and disposal activities.

6.2 Equipment Cleaning/Storage

1. Upon completion of remedial activities, the Contractor shall be responsible for decontaminating the used emergency response equipment as well as the PPE.
2. The Contractor shall be responsible for replacing any spent emergency response equipment and PPE prior to resuming construction-related activities.
3. Decontamination rinse fluids shall be collected and containerized. The Environmental Compliance Department will coordinate waste characterization and disposal activities.
4. Reusable PPE shall be tested and inventoried prior to being placed back into service.

6.3 Waste Disposal

The Contractor is responsible for waste management and waste disposal; however, the Environmental Compliance Department will coordinate all waste characterization, profiling, and disposal activities. All waste management and disposal activities shall conform to the procedures outlined in the Operations and Maintenance Manual (see WGP procedure 35.04.01, "Waste Management").

The Contractor is permitted to manage routine garbage and construction debris without oversight of the Environmental Compliance Department.

Appendix A List of Emergency Contacts

Names	Job Description	Phone Number
Transco Gas Control	NA	800-440-8475 (24-hrs)
TBD	Chief Inspector	TBD
Larry Hasty	District 90 Manager	334-534-6738
Patrick Aman	District 100 Manager	205-287-1087
Tim Perdue	Environmental Compliance	678-451-6167
Contractor	**Job Description**	**Phone Number**
PSC Emergency Response	Emergency Coordinator	877-577-2669
Witt O'Brien's	Alternate Emergency Coordinator	985-781-0804
Regulatory Agencies		**Phone Number**
National Response Center		800-424-8802
Alabama Environmental Management Agency		205-280-2200

Appendix B Emergency Spill Response and Personnel Protection Equipment

Equipment	Quantity	Location
(1) Chemical Spill Kit	1	Adjacent to work space
(2) Oil Spill Kit	1	Adjacent to work space
Spill Response Equipment:		
(1)	One bag loose chemical pulp	Three chemical pillows (18-inch by 18-inch)
	Three chemical socks (48-inch by 3-inch)	Ten chemical mats/pads (24-inch by 24-inch)
	One box garden-sized, 6-mil, disposal polyethylene bags (w/ ties)	Blank drum labels
	One 30-gallon PE open-head drum	Two shovels
(2)	One oil boom (100-foot by 3-inch)	Ten oil pillows (18-inch by 18-inch)
	Ten oil socks (48-inch by 3-inch)	25 oil mats/pads (24-inch by 24-inch)
	One box garden-sized, 6-mil, disposal polyethylene bags (w/ ties)	Blank drum labels
	Three, 55-gallon PE open-head drums	Four shovels
Personnel Protection Equipment:		
The inventory of PPE should include enough for at least four responders reacting to a significant leak/spill.		
Splash goggles, half-face respirators (w/cartridges for benzene)		
Tyvek suits, nitrile gloves, waterproof/chemical resistant hip-waders		

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN &

PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN for CONSTRUCTION PROJECTS

Project: SABAL TRAIL PROJECT

Prepared By:

Sabal Trail Transmission, LLC
400 Colonial Center Parkway, Suite 300
Lake Mary, Florida 32746

Updated: November 2014

Sabal Trail
TRANSMISSION℠

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ABBREVIATIONS AND DEFINITIONS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CI	Chief Inspector (Company employee or Contractor Employee performing the duties of the onsite Construction Manager or Engineer)
Company	Sabal Trail Transmission, LLC
Company SC	Company Spill Coordinator (The Environmental Inspector or the Chief Inspector)
Contractor	Third party service provider performing construction activities for the Company on property owned or under the control of the Company. This role may be filled by the Company on small projects constructed by Company personnel and equipment.
Contractor SC	Contractor Spill Coordinator
CWA	Clean Water Act
DOT	U. S. Department of Transportation
E&C	Engineering & Construction
ECP	Environmental Construction Permitting
EHS, EH&S	Environmental Health and Safety
EI	Environmental Inspector (Company employee or Contractor Employee performing the duties of onsite environmental specialist overseeing Contractor compliance with environmental permit conditions, laws and regulations)
E&SCP	Erosion & Sedimentation Control Plan
FERC	Federal Energy Regulatory Commission
FWPC	Federal Water Pollution Control Act
HDD	Horizontal Directional Drill
JSA	Job Safety Analysis
MSDS	Material Safety Data Sheets
ppm	Parts per Million
Environmental Lead	Environmental Construction Permitting specialist assigned to the project
OPA	Oil Pollution Act
RCRA	Resource Conservation and Recovery Act
SPCC Plan or Plan	Spill Prevention, Control and Countermeasure Plan
TSCA	Toxic Substances Control Act

1.0 PURPOSE/PLAN OBJECTIVE

Sabal Trail Transmission, LLC ("Company") has prepared this Spill Prevention, Control and Countermeasure ("SPCC") Plan ("Plan") for construction projects in the United States. The purpose of this Plan is to reduce the probability and risk of a potential spill or release of oil or hazardous materials by the Company or Contractor during construction-related activities, by providing training to the Company and Contractor and expediting spill response and cleanup. This plan is not intended to meet the requirements of existing facility operations.

The Plan's specific objectives are to identify and address:

- The type and quantity of material handled, stored, or used on site during construction;
- The measures to be taken for spill preparedness and prevention;
- Emergency response procedures;
- Spill incident reporting/notification procedures; and
- Local emergency response team arrangements.

This plan has been prepared to meet the requirements of the Federal Energy Regulatory Commission's ("FERC's") *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures), the Oil Pollution Act ("OPA"), the Federal Water Pollution Control Act ("FWPC"), the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") of 1980, the Resource Conservation and Recovery Act ("RCRA"), the Toxic Substances Control Act ("TSCA") and the Clean Water Act ("CWA").

The Company Environmental Construction Permitting ("ECP") group is responsible for the development and maintenance of this Plan. The Plan will be distributed to the Company Engineering & Construction ("E&C") Department's teams and associated Company personnel and will be included in the construction contract. It is the responsibility of the E&C teams to distribute to any necessary Contractors for implementation.

This Plan outlines both Company and Contractor responsibilities by topic. The Contractor is responsible for implementation of the Plan. In the absence of a Contractor, the Company will be responsible for both Company and Contractor responsibilities as they are laid out in this Plan.

A copy of the Plan must be on site during active construction and should also be maintained at the closest construction field office.

2.0 TRAINING

The Company requires all Contractor and Company personnel engaged in any construction activity to receive training in the implementation of the Plan prior to the commencement of on-site construction related activities.

Site visitors are to be given a brief review of the Plan as part of their orientation on safety and emergency procedures prior to the start of any on-site activities.

Contractor Responsibility

The Contractor will be responsible for the following:

- Keep training records
- Perform training briefings through ongoing meetings like tailgates and the daily project Job Safety Analysis ("JSA") that include:
  - Precautionary measures to prevent spills;
  - Potential sources of spills, including equipment failure or malfunction;
  - Standard operating procedures in the event of a spill;
  - Applicable notification requirements;
  - Equipment, materials and supplies available for clean-up of a spill;
  - Hazardous waste identification procedures;
  - Generation and proper handling of all non-hazardous waste, hazardous waste, and other toxic substances;
  - Proper storage, labeling, transportation and disposal of non-hazardous and hazardous waste; and
  - Sample collection procedures.

Company Responsibility

The Company Chief Inspector ("CI"), Environmental Inspector ("EI"), or their designate will perform the following:

- Teach awareness-level training at the initial project environmental training session;
- Ensure further training is available for other new project personnel; and
- Audit training records kept by the Contractor as necessary.

3.0 PRE-PLANNING - MATERIAL INVENTORY AND DOCUMENTATION

Contractor Responsibility

The Contractor will be responsible for the following **prior** to the start of construction:

- Develop an inventory of all oil/hazardous material stored or used during construction;
- Complete Tables I, II, IV, V and VI (see Appendix A);
- Obtain material safety data sheets ("MSDS") (Appendix B) for all hazardous and non-hazardous substances listed in Table I (see Appendix A);
- Prepare a basic facility diagram or sketch for any storage areas, including pipe yards and temporary storage areas. The diagram should include locations of oil-filled containers, direction of run-off, emergency evacuation routes and assembly areas (see Appendix E); and
- Submit the required Tables, MSDS, and signature pages to the ECP's Environmental Lead for review and approval.

Company Responsibility

- Complete Tables III (see Appendix A);
- Review the Tables, MSDS, and signature pages submitted by the Contractor for approval; and
- Distribute approved Tables, MSDS, and signature pages to include in Plan as Appendices A, B and D.
- Fill out any signature pages or forms (see Appendix D)
    - Management Approval and Cleanup Commitment
    - Certificate of Determination of Substantial Harm Criteria

4.0 SPILL AND LEAK PREPAREDNESS AND PREVENTION

4.1 Prevention and Preparedness

Contractor Responsibility

- Complete Appendix A, Table I, Material and Waste Storage Inventory, and Table VI, Areas for Potential Leaks and Spills, prior to construction;
- Provide spill prevention, containment, and clean up equipment, and keep it available on-site;
- Perform daily inspections of all equipment, storage tanks, and/or container storage areas;
- Repair all leaking equipment, machinery or tools immediately. If items cannot be repaired, remove them immediately from the project site;
- Maintain a minimal spill kit (absorbent diapers, plastic bags, gloves, etc.) for each piece of hydraulically operated equipment and personnel vehicles within the project area;
- Store materials as indicated in the storage facility diagram or sketch provided by the Contractor in Appendix E;
- Submit a secondary containment plan for any hazardous material storage within the project area to the Company for approval **prior** to storage; and
- Obtain written approval from the project CI or EI for hazardous material storage within 100 feet of a wetland or waterbody.

Company Responsibility

- Review any secondary containment or storage plans submitted by the Contractor for approval.

4.1.1 Secondary Containment

Contractor Responsibility

- Single wall tanks shall be provided with temporary secondary containment that will hold at least 110% of the tank capacity of the largest tank inside the containment area;
  - This includes pumps, generators, compressors or other petroleum powered equipment used on site for dewatering and other activities during construction.
- PCB (50 parts per million ("ppm") or greater) storage tanks shall be double-walled or have secondary containment that will hold 200 percent of the tank capacity;
- All containers with a storage capacity greater than 55 gallons shall have temporary containment (see Appendix A, Table I for type of temporary containment); and
- All pumps and other portable fuel burning equipment used during construction will be sited in secondary containment.

4.1.2 Storage/Inspection (Tanks/Containers)

Contractor Responsibility

- Operate only those tanks for fuel and material storage that meet the approval of the Company;
- Elevate tanks a maximum of two feet above grade;
- Inspect vehicle-mounted tanks to ensure all are equipped with flame/spark arrestors on all vents to prevent self-ignition;

- Locate tank storage in areas that are at least 100 feet from all waterbodies, wetlands, and designated municipal watershed areas, with certain exceptions as approved by ECP and listed in Appendix A, Table IV;
- Complete Appendix A, Table IV, Tank and Container Storage Exception Areas, and submit to the Company for approval prior to construction;
- Inspect all tanks daily for leaks and deterioration. The results of all inspections shall be made available to the Company upon request;
- Do not store incompatible materials in sequence in tanks prior to decontamination (A general list of potentially incompatible materials that may be used during construction are included in Appendix A, Table I);
- Store small cans of gasoline, diesel, solvents, etc., within the temporary secondary containment or within secured trailers or vehicles when not in use;
- Replace leaking and/or deteriorated containers as soon as the condition is first detected; and
- Ensure that all container storage and containment areas being used to store hazardous materials or wastes are in compliance with applicable local, state and federal requirements.

4.1.3 Loading/Unloading Areas

Contractor Responsibility

- Transfer liquids and refuel only in pre-designated and pre-approved locations that are at least 100 feet from all waterbodies and wetlands, with certain exceptions as approved by the EI and listed in Appendix A;
- Inspect the area beneath loading/unloading location for spills before and after each use;
- Utilize drip pans at all hose connections while loading/unloading liquids. If a leak or spill occurs, the loading/unloading operation will be stopped and the spill will be contained, cleaned up and collected prior to continuing the operation;
- Inspect all outlets of the tank trucks prior to leaving the loading and unloading area to prevent possible leakage from the truck while in transit;
- Equip any service vehicle used to transport lubricants and fuel with an emergency response spill kit. At a minimum, this kit must include:
    - 25 lbs of granular oil absorbent
    - 10, 48" x 3" oil socks
    - 5, 17" x 17" oil pillows
    - 1, 10" x 4" oil boom
    - 20, 24" x 24" x 3/8" oil mats
    - Garden size, 6 mil, polyethylene bags
    - 10 pair of latex gloves
    - 1, 55-gallon polyethylene open-head drum;
- Equip any service vehicle used to transport lubricants and fuel with a chemical response kit. At a minimum, this kit must include:
    - 1 bag of loose chemical pulp
    - 2 to 3, 17" x 17" chemical pillows
    - 2, 48" x 3" chemical socks
    - 5, 18" x 18" x 3/8" adsorbent mats
    - garden-size, 6 mil, polyethylene bags
    - 10 pair of latex gloves
    - 1, 30-gallon polyethylene open-head drum
    - hazardous waste labels

Company Responsibility

- Personnel shall be present during loading and unloading activities.

5.0 CONTINGENCY PLAN AND EMERGENCY PROCEDURES

All Company and Contractor personnel have responsibilities for spill prevention, control, and countermeasure.

Contractor Responsibility

- Maintain adequate manpower and equipment at the pipe yard or contractor ware yard necessary to divert any spill from reaching waterbodies and wetland areas; and
- Complete Appendix A, Table I, Emergency Response and Personal Protective Equipment, with a list of emergency equipment and storage location.

Company Responsibility

- Complete Appendix A, Table III, Key Emergency Contacts, prior to construction, and update as necessary.

First Responder Responsibility

The first responder is the person who first observes a spill or release of oil or other hazardous materials to the environment.

This person will take the following steps:

- Assess the situation to determine if the situation poses an immediate threat to human health or the environment;
- Identify hazardous material involved, if any;
- Report the spill to the Company Spill Coordinator ("Company SC") and Contractor Spill Coordinator ("Contractor SC") immediately; and
- Standby at a safe distance and keep others away.

Contractor SC Responsibility

- Coordinate the response to all spills which occur as a result of Contractor operations;
- Report the spill to the Company;
- Coordinate with the Company SC; and
- Conduct subsequent site investigations and associated incident reports unless otherwise directed by the Company.

The Contractor SC may be removed by the Company SC as spill response coordinator at the discretion of the Company.

The Contractor SC will direct Contractor personnel to:

- Shut off source of spill or leak as quickly as possible;
- Minimize affected area with appropriate containment or dike/berm;
- Assemble required spill response equipment as required (protective clothing, gear, heavy equipment, pumps, absorbent material, empty drums, etc.);

- Ensure that spilled material is placed in appropriate containers, in accordance with the best management practices and applicable laws and regulations;
- Properly label and store containers in accordance with applicable requirements; and
- Ensure that all spill response equipment is fully functional. Any equipment that cannot be reused shall be replaced.

Company SC Responsibility

The Company SC will be responsible for overseeing the Contractor SC's cleanup of all spills of oil or hazardous materials.

Upon notification, the Company SC shall:

- Assess situation for potential threat to human health, environment and the neighboring community;
- Implement evacuation, if necessary;
- Activate emergency shutdown, if necessary;
- Control source as conditions warrant;
- Ensure that incompatible materials are kept away from the impacted area;
- Keep any potential ignition source away from the impact area, if spilled material is flammable;
- Coordinate sampling, disposal and equipment decontamination with Environmental Health and Safety ("EHS") in Houston, if necessary;
- For spills of PCBs, contact EHS for special spill response requirements related to PCB spills;
- Assist with the coordination of cleanup and disposal activities;
- If necessary, contact outside remediation services, in coordination with EHS, to assist with clean up;
- Notify EHS of all quantities and description of wastes to be handled by EHS;
- Complete the *EH&S Incident Investigation Form* (see Appendix C) and distribute accordingly;
- For unanticipated release of hydrostatic test waters, notify state contact if required by state permit, in accordance with timeframes required by state permit;
- Review permits to determine if immediate water sampling of test water is required and arrange if necessary; and
- Determine if local Right of Way agent will notify public officials (e.g. township manager and/or mayor).

6.0 SPILL CLEAN-UP/WASTE DISPOSAL PROCEDURES OF HYDROSTATIC TEST WATER

6.1 Oil/Fuel and Hazardous Material Spills and Unanticipated Releases

Contractor Responsibility

- Ensure no immediate threat to surrounding landowners or environment;
- Identify/verify the material and quantity released;
- Review MSDS to determine the proper handling;
- Ensure that Personal Protective Equipment and containers are compatible with the substance;
- Remediate small spills and leaks as soon as feasible. Use adsorbent pads whenever possible to reduce the amount of contaminated articles;
- Restrict the spill by stopping or diverting flow to the oil/fuel tank;
- If the release exceeds the containment system capacity, immediately construct additional containment using sandbags or fill material. Every effort must be made to prevent the seepage of oil into soils, wetlands and surface waters;
- Block off drains and containment areas to limit the extent of the spill. For chemical spills, never wash down a spill with water;
- If a release occurs into a storm drain or stream, immediately pump any floating layer into drums. For high velocity streams, place oil booms or hay bales between the release area and the site boundary and downstream of affected area. As soon as possible, excavate contaminated soils and sediments within approved work areas;
- Collect and reclaim as much of the spill as possible using a hand pump or similar device. Containerize contaminated soils in an appropriate Department of Transportation ("DOT") container in accordance with applicable requirements. Never place incompatible materials in the same drum;
- For larger quantities of soils, construct temporary waste piles using plastic liners placing the contaminated soils on top of the plastic and covered by plastic. Plastic-lined roll-off bins should be leased for storing this material as soon as feasible;
- Properly label any drums, containers or storage piles in accordance with applicable requirements;
- Move drum to secure staging or storage area;
- Decontaminate all equipment in a contained area and collect fluids in drums;
- Document and report cleanup activities to the Company SC as soon as feasible; and
- If environmentally sensitive resources (wetlands, waterbodies) exist in the area, ensure that Best Management Practices as described in Company's Erosion &Sedimentation Control Plan ("E&SCP") are utilized to minimize impact to these resources.

Company Responsibility

- If necessary, arrange for sampling the substance for analysis and waste profiling, according to instructions from the Company Standard Operating Procedures, and/ or EHS;
- Document and report activities to EHS as soon as feasible.

6.2 Disposal of Contaminated Materials/Soils

For Company and Contractor protocol on the disposal of contaminated materials, soils, or any other waste materials, please see the Company Waste Management Plan.

6.3 Notification

Company Responsibility

- The Company SC shall notify the Emergency Spill Hotline at (800) 735-6364 and those listed in Appendix A, Table III, immediately for spills that meet any of the following criteria:
  - one pound or more of a solid material (excluding Horizontal Directional Drill ("HDD") mud) spilled on land;
  - five gallons or more of a liquid spilled on land;
  - creates a sheen on water; or
  - unanticipated release of hydrostatic test water.
- If necessary, notify the local fire department, law enforcement authority, or health authority as appropriate. The following information should be provided:
  - the name of the caller and callback number;
  - the exact location and nature of the incident;
  - the extent of personnel injuries and damage;
  - the extent of release; and
  - the material involved and appropriate safety information.
- An incident report form should be filled out following containment and cleanup of the spill or release. Incident data should be gathered using the *EH&S Incident Investigation Form* (see Appendix C) and should be sent to the appropriate ECP project manager for records retention and entry into the EPASS/ILP database.

7.0 HOUSEKEEPING PROGRAM

7.1 Construction Area

Contractor Responsibility

- Maintain construction area in neat and orderly manner; and
- Routinely collect and properly dispose of all trash off-site.

7.2 Contractor Yards/Ware Yards

Contractor Responsibility

- Produce a "site specific" plan to address storage, spill prevention and overall yard organization for all contractor yards and ware yards. Contractor yard "site specific" plans should include the following:
  - facility name;
  - physical address;
  - longitude and latitude coordinates;
  - directions to facility (including road names);
  - date of first oil and hazardous material storage;
  - location of oil and hazardous material containers greater than 55 gallons;
  - loading/unloading areas;
  - direction of drainage flow; and
  - primary and secondary evacuation routes.
- Provide adequate aisle spacing to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment as necessary in storage areas;
- Ensure similar housekeeping practices enforced in construction areas are also implemented in storage areas; and
- Any facility with an aggregate aboveground oil storage capacity greater than 1,320 US gallons but less than 10,000 gallons must have the plan self-certified by the owner or operator of the qualified facility or a licensed Professional Engineer. Any facility with an aggregate aboveground oil storage capacity greater than 10,000 gallons must have the plan reviewed and certified by a licensed Professional Engineer.

7.3 Security

Contractor Responsibility

- Hazardous wastes and waste containing PCBs greater than 50 ppm will be stored in a secured location (i.e. fenced, locked, etc.). Fuel storage areas will be located to minimize, as much as possible, tampering by unauthorized personnel during non-operational hours.
- Complete Table V, Waste Storage Security Information, in Appendix A, prior to construction.

Company Responsibility

- Review Table V, Waste Storage Security Information in Appendix A, that has been prepared by the Contractor prior to construction.

Project Signatures:

Company Spill Coordinator:

Print Name

Signature Date

Contractor Spill Coordinator

Print Name

Signature Date

APPENDIX A - TABLES

TABLE I – MATERIAL AND WASTE INVENTORY

Oil and Fuel to be used or stored on site during construction:

STORAGE CAPACITY OF OIL FILLED-CONTAINERS

Container Number[a/]	Storage capacity (volume)	Location

[a/] The reference container numbers should correspond to the facility diagram in Appendix E.

Commercial Chemicals to be used or stored on site during construction:

Hazardous and Non-Hazardous Wastes to be used or stored on site during construction:

Incompatible Materials to be used or stored on site during construction:

Type of Temporary Containment containers to be used:

TABLE I TO BE COMPLETED BY CONTRACTOR
Prior to the Start of Construction and updated as necessary

TABLE II – EMERGENCY RESPONSE AND PERSONAL PROTECTIVE EQUIPMENT

Spill Response:

Equipment	Quantity	Location

Fire Protection:

Equipment	Quantity	Location

Personnel Protection:

Equipment	Quantity	Location

TABLE II TO BE COMPLETED BY CONTRACTOR
Prior to the Start of Construction and updated as necessary

TABLE III – KEY EMERGENCY CONTACTS

The list of key personnel who will be contacted in the event of an emergency or spill incident include:

1. ***Company Emergency Contacts*** Contact Name Phone Number

Company Spill Coordinator & Environmental
Inspector (within 15 minutes identifying of incident)

24-hour Emergency Spill Hotline -- 1-800-735-6364
(within 15 minutes of identifying incident)

Regional Environmental Coordinator
(within 15 minutes of identifying incident)

ECP's Project Environmental Lead / PM
(notify within 60 minutes of incident & submit
Spill Report Form within 24 hours to ECP PM)

Company Project Manager

Company Environmental Coordinator

Field Construction
Company Construction Coordinator

2. ***Contractor Emergency Contact***

Contractor Spill Coordinator

3. ***Local Authorities*** – As necessary

Emergency contact for Police, Fire & Medical assistance ***Dial 911***

Non-Emergency Local Authorities or Contacts		
Location	**Contact**	**Phone Number**

4. ***<u>Environmental Agencies</u>***

Notification to be made by Regional Environmental Coordinator and ECP's PM

5. ***<u>Potential Environmental Remedial Service Contractors</u>***

Clean Harbors Environmental Services, Inc.	Howard Alexander	(800) 782-8805
Safety-Kleen (FS), Inc.	Edward A. Mitchell	(281) 478-7700
U.S.A. Environment	Cesar Garcia	(713) 425-6925 or (832) 473-5354
WRS Infrastructure and Environment Inc.	Steve Maxwell	(281) 731-0886

TABLE III TO BE COMPLETED BY COMPANY
Prior to the Start of Construction and updated as necessary

TABLE IV – TANK AND CONTAINER STORAGE EXCEPTION AREAS

Tank and container storage shall be located in areas that are at least 100 feet from all waterbodies and wetlands.

The below exceptions have been approved by ECP and EHS:

1.

2.

3.

4.

TABLE IV TO BE COMPLETED BY CONTRACTOR Prior to the Start of Construction and updated as necessary

TABLE V – WASTE STORAGE SECURITY INFORMATION

TABLE V TO BE COMPLETED BY CONTRACTOR
Prior to the Start of Construction and updated as necessary

TABLE VI–AREAS FOR POTENTIAL LEAKS AND SPILLS

1.

2.

3.

4.

TABLE VI TO BE COMPLETED BY CONTRACTOR Prior to the Start of Construction and updated as necessary

APPENDIX B - MSDS

APPENDIX C – EH&S INCIDENT INVESTIGATION FORM

APPENDIX D – REQUIRED SIGNATURE FORMS

Management Approval and Cleanup Commitment
40 CFR §112.7

This Spill Prevention, Control and Countermeasures Plan (Plan), including the Spill Procedures Chart and Supplemental Document, which has been prepared in accordance with 40 CFR 112, has been reviewed and approved by the Project Manager. The Project Manager has the level of authority to commit the necessary resources to fully implement this Plan and to contain and clean up any oil discharged at this facility. By signing below, the **Project Manager** also **authorizes station supervisors to expediently commit manpower, equipment, and materials necessary to contain and remove any harmful quantity of oil discharged from this facility** (40 CFR §112.7). **This commitment includes the authority to use company and/or contract personnel and equipment.**

Facility Name: _____

Location: _____

Signature: _____

Name: _____

Date: _____

Title: _____

CERTIFICATE OF DETERMINATION OF SUBSTANTIAL HARM CRITERIA

Facility Name: _____

Location: _____

Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons? Yes___ No ___

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is large enough to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area? Yes___ No ___

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in rule 40 CFR 112 Attachment C-III or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to this Part, Section 13, for availability) and the applicable Area Contingency Plan.
Yes___ No ___

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula) such that a discharge from the facility would shut down public drinking water intake? For the purpose of 40 CFR 112, public drinking water intakes are analogous to public water systems as described in 40 CFR 143.2(c)
Yes___ No ___

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last five years?
Yes___ No ___

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for this information, I believe that the submitted information is true, accurate, and complete.

Signature: _____
Title: _____

Name (please type or print): _____

Date: _____

APPENDIX E – PIPEYARD / FACILITY STORAGE DRAWING

FLORIDA SOUTHEAST CONNECTION™

FLORIDA SOUTHEAST CONNECTION PROJECT
SPILL PREVENTION AND CONTROL PLAN

FLORIDA SOUTHEAST CONNECTION PROJECT
SPILL PREVENTION AND CONTROL PLAN

Preventative Measures

This Spill Prevention and Control Plan addresses actions used to prevent spills in addition to specifying actions that will be taken should any spills occur, including emergency notification procedures.

Training

FSC's contractor will instruct personnel on the operation and maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, and lubricants. Personnel will also be made aware of the pollution control laws, rules, and regulations applicable to their work.

Spill prevention briefings with the construction crew will be scheduled and conducted to insure adequate understanding of spill prevention measures. These briefings will highlight:

- precautionary measures to prevent spills;
- potential sources of spills, such as equipment failure or malfunction;
- standard operating procedures in case of a spill;
- equipment, materials, and supplies available for clean-up of a spill; and
- a list of known spill events.

Equipment Inspection / Maintenance

FSC's contractor will inspect and maintain equipment that must be fueled and/or lubricated according to a strict schedule. FSC's contractor will submit to FSC for approval written documentation of the methods used and work performed.

All containers, valves, pipelines, and hoses will be examined regularly to assess their general condition. The examination will identify any signs of deterioration that could cause a spill and signs of leaks, such as accumulated fluids. All leaks will be promptly corrected and/or repaired.

Refueling

Refueling Operations

FSC's contractor will insure that equipment is refueled and lubricated within the right-of-way and at least 100 feet away from all waterbodies and wetlands with the following exceptions:

- areas where removing equipment from a wetland for servicing would increase adverse impacts to the wetland;
- sites where moving equipment to refueling stations from pre-fabricated equipment pads is impracticable or where there is a barrier from the waterbody/wetland (i.e., road or railroad);
- locations where the waterbody or wetland is located adjacent to a road crossing (from which the equipment can be serviced); and
- refueling of immobile equipment including, but not limited to, bending and boring machines, air compressors, padding machines, and hydro-test fill pumps.

In these areas, auxiliary fuel tanks will be used to reduce the frequency of refueling operations and in no case will refueling take place within 100 feet of any known potable water wells.

FSC's contractor will assure that all refueling is done pursuant to the following conditions:

- Impact minimization measures and equipment will be sufficient to prevent discharged fluids from leaving the right-of-way or reaching wetlands or waterbodies, and be readily available for use. These will include some combination of the following:
    a. dikes, berms or retaining walls sufficiently impervious to contain spilled oil;
    b. sorbent and barrier materials in quantities determined by the Contractor to be sufficient to capture the largest reasonably foreseeable spill;
    c. drums or containers suitable for holding and transporting contaminated materials;
    d. curbing;
    e. culverts, gutters, or other drainage systems;
    f. weirs, booms, or other barriers;
    g. spill diversion or retention ponds; and
    h. sumps and collection systems.
- FSC's contractor will prepare for approval by FSC a list of the type, quantity, and the storage location of containment and clean up equipment to be used during construction.
- All spills will be cleaned up immediately. Containment equipment will not be used for storing contaminated material.

Storage

Storage containment areas will not have drains, unless such drains lead to a containment area or vessel where the entire spill can be recovered. Hazardous materials shall not be stored within 100 feet of any wetland or waterbody.

Personnel Support

Prior to construction, a written inventory of water wells within 150 feet of the construction work area will be prepared. The authorities of all potable water supply intakes located within three miles downstream of any crossings will be notified a minimum of one week prior to construction.

Impact Minimization Measures

Containment is the immediate priority in the case of a spill. A spill will be contained on the ROW, if possible. Clean up procedures will begin immediately after a spill is contained. In no case will containment equipment be used to store contaminated material.

In case of a spill, FSC's contractor and/or inspector will notify the construction supervisors, and FSC, and FCS will notify the Florida Department of Environmental Protection.

If FSC's contractor determines that a spill is small enough such that the construction crew can safely handle it, the crew will use construction equipment to containerize all spilled material, contaminated soil, and sorbent material in a manner consistent with the spilled materials' characterization.

If FSC's contractor determines that a spill cannot be adequately excavated and disposed of by the construction crew alone, the Contractor will contact waste containment specialists. FSC's contractor will ensure that all excavated wastes are transported to a disposal facility licensed to accept such wastes.

FSC's contractor will prepare a Construction Site Spill Report form to be given to the FSC that includes:

a. the date, time and location of the occurrence;
b. a description of the material spilled;
c. the quantity spilled;
d. the circumstances that caused the spill;
e. a list of waterbodies affected or potentially affected by the spill;
f. a statement verifying whether a sheen is present;
g. the size of the affected area;
h. an estimate of the depth that the material has reached in water or on soil;
I. a determination of whether the spill will migrate off of the right-of-way;
j. a determination of whether the spill is under control;
k. a statement verifying that clean-up has begun and a description of the methods being used to clean up the spill;
l. the names of the people observing the spill (with their affiliations); and
m. the Division "Report of Spill" form.

The National Response Center (1-800-424-8802) will be notified immediately if spills occur above threshold levels (Clean Water Act, 40 CFR 110.10) into surface waters and/or wetlands.

Suggested Equipment List

FSC's contractor will prepare a list of the type, quantity, and location of storage or containment and clean up equipment to be used on the construction site. The list will include the procedures and impact minimization measures to be used in response to a spill. FSC's contractor's choice of impact minimization measures and equipment will be tailored to meet the characteristics of the affected terrain as well as the types and amounts of material that could potentially be spilled.

Terrestrial Construction

General equipment that will be used for spill containment and cleanup on terrestrial areas includes:

- sorbents (pillows, socks, and wipe sheets) for containment and pick up of spilled liquids;
- commercially available spill kits (or the functional equivalent thereof) that are prepackaged, self-contained spill kits containing a variety of sorbents for small to large spills;
- structures such as gutters, culverts, and dikes for immediate spill containment;

- shovels, backhoes, etc., for excavating contaminated materials;
- sumps and collection systems; and
- drums, barrels, and temporary storage bags to clean up and transport contaminated materials.

Fuels and Lubricating Oil Storage

Containment equipment will be kept close to tanks and barrels to minimize spill response time, and will include absorbent pads or mats. The quantity and capabilities of the mats will be sufficient to capture the largest foreseeable spill, given right-of-way characteristics and crankcase and other fuel vessel capacities.

Routine Refueling and Maintenance

Absorbent pads and mats will be placed on the ground beneath equipment before refueling and maintenance. Equipment that will be stored on site for routine refueling and maintenance includes small sorbent kits (or their functional equivalent).

Equipment Failure

Kits with the capacity of absorbing up to five gallons of liquid can fit beneath the operator's seat on construction equipment for use in an equipment failure.

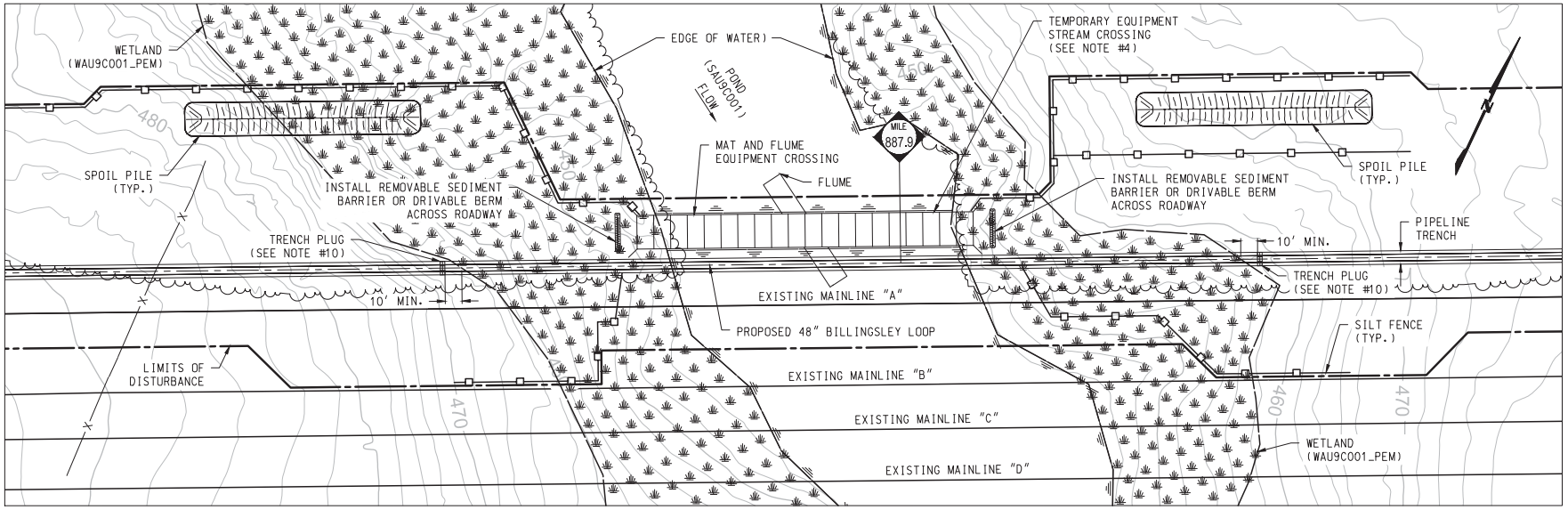
Waterbody and Wetland Crossings

For each wetland and waterbody crossed, the equipment listed below will be available in addition to that needed for terrestrial construction. This equipment will be stored close to the water or wetland to minimize response time, and will include:

- oil containment booms and the related equipment needed for rapid deployment, and
- equipment to remove oils from water, such as oleophilic and hydrophobic absorbent booms and mats, and/or mechanical skimmers.

APPENDIX J

MAJOR WATERBODY CROSSING PLANS



J-1

NOTES:

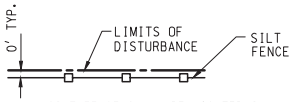
1. ACTUAL BMP'S MAY BE MODIFIED BASED ON FIELD CONDITIONS.
2. SILT FENCE SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY.
3. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
4. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. CONTRACTOR SHALL INSTALL MATS IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY. FLUME PIPE WILL BE INSTALLED AS NEEDED TO ENABLE STORMWATER RUNOFF TO FLOW ACROSS WORK AREA AND UNDER MATS.
5. STAGING AREA(S) FOR WATERBODY CROSSING(S) SHALL BE LOCATED WITHIN PRE-APPROVED WORKSPACES.
6. POND, 6-8 FEET DEEP, WILL BE PARTIALLY DRAINED TO FACILITATE INSTALLATION. CONTRACTOR WILL ACCESS DAM VIA ACCESS ROAD AR-887.9 AND USE A COMBINATION OF AN INLET FILTER, PUMPS AND/OR SIPHON TO LOWER THE WATER LEVEL IN THE POND BELOW THE WORK AREA. WATER WILL REMAIN IN THE LOWER (SOUTHERN) PORTION OF THE POND AND BE LOWERED AS NEEDED TO MAINTAIN A DRY WORK AREA. ONCE INSTALLATION IS COMPLETE, THE WATER LEVEL WILL BE ALLOWED TO RETURN TO PRE-CONSTRUCTION LEVEL.
7. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
8. INSTALL DIVERSION TRENCHES AS NEEDED AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
9. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF WATERBODIES OR WETLANDS.
10. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.

NOTE:

DO NOT INSTALL ANY SILT FENCE WITHIN THE POND AREA ALONG THE LIMITS OF DISTURBANCE.

LEGEND

- PROPOSED 48" BILLINGSLEY LOOP
- EXISTING MAINLINES
- WATER EDGE
- STREAM CROSSING
- WETLAND AREA



SILT FENCE SHALL BE LOCATED ON THE LIMITS OF DISTURBANCE.

0 60 120 180
SCALE IN FEET

WOOD GROUP MUSTANG, INC.
PROJECT NO: 103907
ONE METROPLEX DRIVE, SUITE 100
BIRMINGHAM, ALABAMA 35209

DRAWING NO.	REFERENCE TITLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC
CONSTRUCTION PLAN
HILLABEE EXPANSION PROJECT
PROPOSED 48" BILLINGSLEY LOOP
POND (SAU9C001) M.P. 887.90
AUTAUGA COUNTY, ALABAMA

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
A	10/31/14	RJB	ISSUED FOR FERC			

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CHECKED BY: MEH	DATE: 08/18/14	
APPROVED BY: JWV	DATE: 10/31/14	
WO: 1156827		

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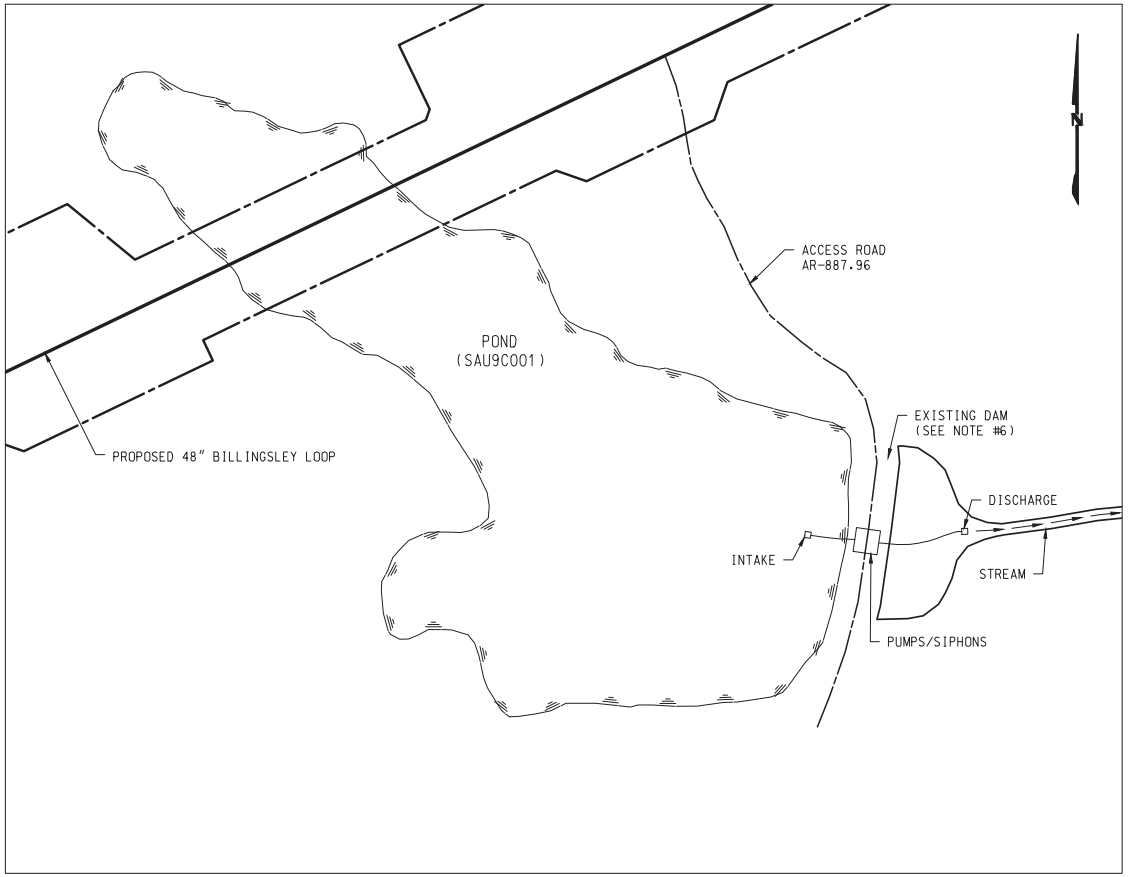

J-2

LEGEND

- PROPOSED 48" BILLINGSLEY LOOP
- LIMITS OF DISTURBANCE
- WATER EDGE
- ACCESS ROAD

WOOD GROUP MUSTANG, INC.
PROJECT NO: 103907
ONE METROPLEX DRIVE, SUITE 100
BIRMINGHAM ALABAMA 35209

DRAWING NO.	REFERENCE TITLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC
CONSTRUCTION PLAN
HILLABEE EXPANSION PROJECT
PROPOSED 48" BILLINGSLEY LOOP
POND (SAU9C001) M.P. 887.90
AUTAUGA COUNTY, ALABAMA

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
A	10/31/14	RJB	ISSUED FOR FERC			

DRAWN BY: GOR DATE: 08/01/14
CHECKED BY: MEH DATE: 08/18/14
APPROVED BY: JWV DATE: 10/31/14
WO: 1156827

SCALE: NOT TO SCALE

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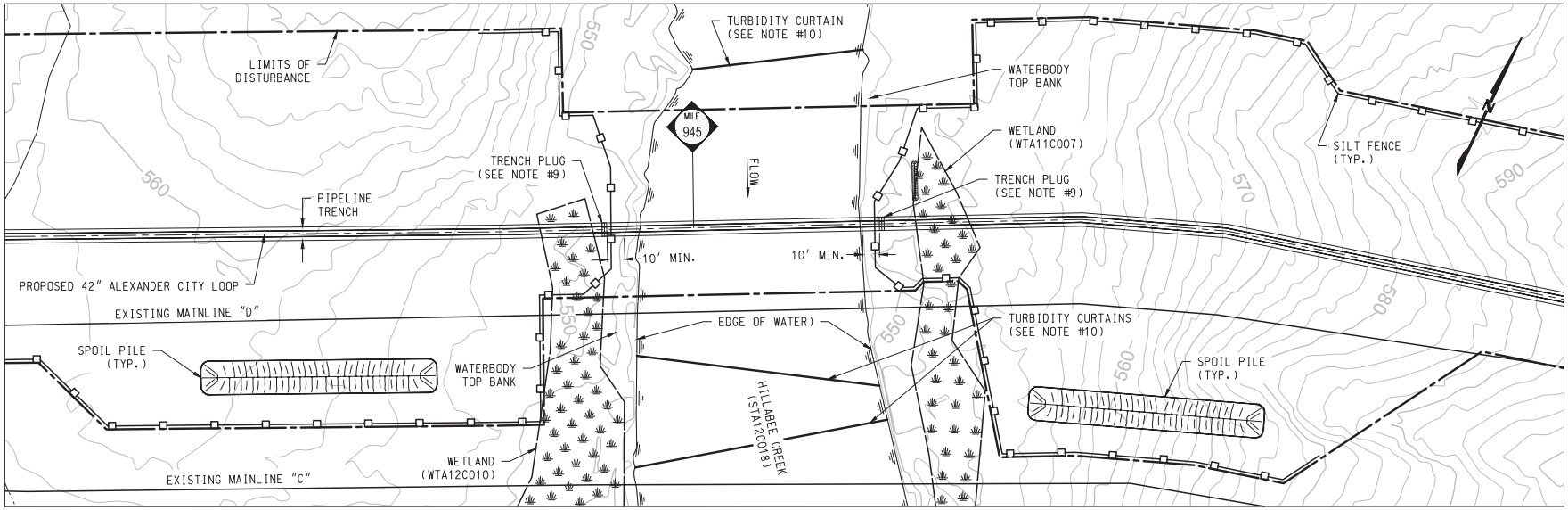
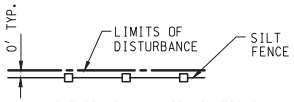


NOTES:

1. ACTUAL BMP'S MAY BE MODIFIED BASED ON FIELD CONDITIONS.
2. SILT FENCE SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY.
3. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
4. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL SUBMIT EQUIPMENT BRIDGE/CROSSING PLANS FOR APPROVAL BY COMPANY PRIOR TO COMMENCING WORK.
5. STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND LOCATED WITHIN PRE-APPROVED WORKSPACES.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
7. INSTALL DIVERSION TRENCHES AS NEEDED AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
8. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF WATERBODIES OR WETLANDS.
9. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
10. INSTALL TURBIDITY CURTAINS AS SHOWN IF FLOW IS CONDUCIVE. REMOVE TURBIDITY CURTAINS AFTER ALL WORK IN CREEK HAS BEEN COMPLETED AND CREEK BANKS ARE STABILIZED, SEEDED AND MULCHED. INSTALLATION, MAINTENANCE AND REMOVAL OF TURBIDITY CURTAIN WILL BE ACCOMPLISHED BY HAND AND WILL REQUIRE LABORERS TO WALK UP AND DOWN THE STREAM BANKS TO SECURE THE CURTAINS IN PLACE.

LEGEND

- PROPOSED 42" ALEXANDER CITY LOOP
- EXISTING MAINLINES
- WATER EDGE
- STREAM CROSSING
- WETLAND AREA



SILT FENCE SHALL BE LOCATED ON THE LIMITS OF DISTURBANCE.

0 60 120 180
SCALE IN FEET

WOOD GROUP MUSTANG, INC.
PROJECT NO: 102333
ONE METROPLEX DRIVE, SUITE 100
BIRMINGHAM, ALABAMA 35209

DRAWING NO.	REFERENCE TITLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC
CONSTRUCTION PLAN
HILLABEE EXPANSION PROJECT
PROPOSED 42" ALEXANDER CITY LOOP
HILLABEE CREEK (STA12C018) M.P. 945.01
TALLAPOOSA COUNTY, ALABAMA

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.
A	10/31/14	RJB	ISSUED FOR FERC			

DRAWN BY: GCR DATE: 08/01/2014
CHECKED BY: MEH DATE: 08/18/14
APPROVED BY: JWV DATE: 10/31/14
WO: 1156867

SCALE: 1"=60'

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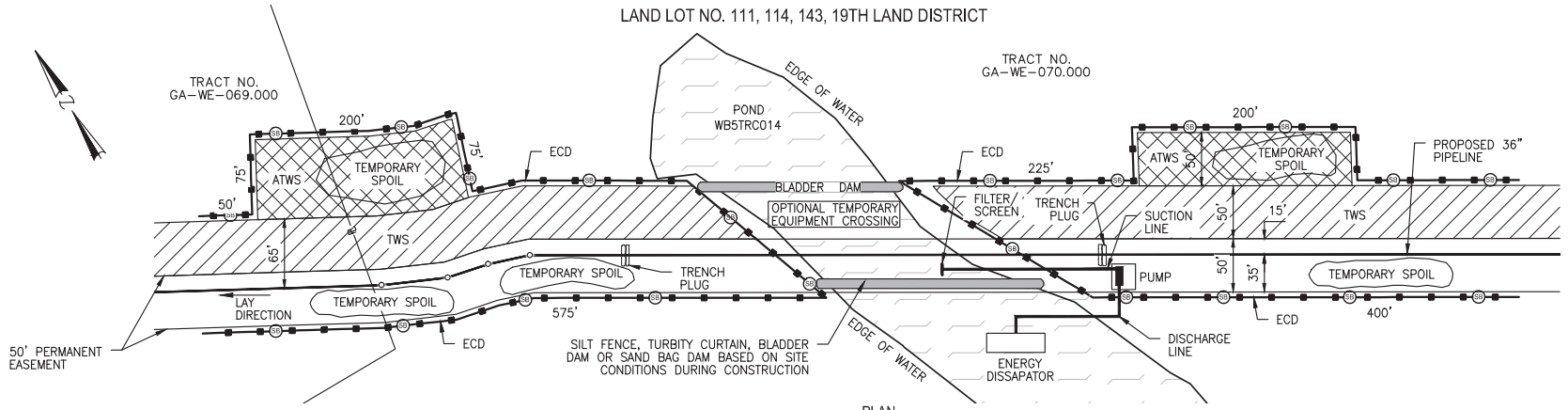
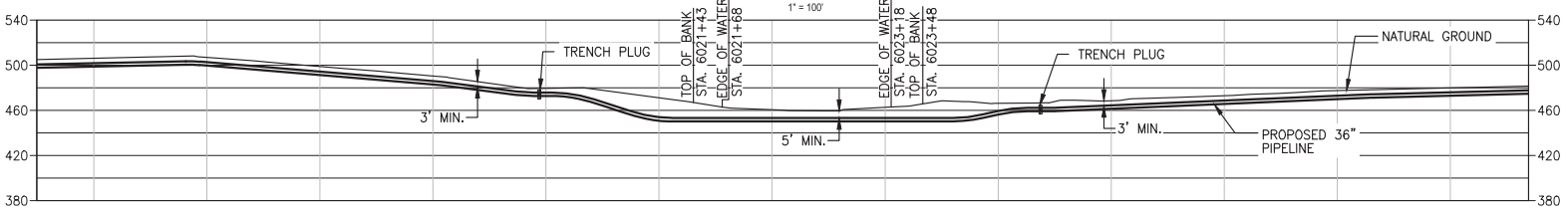
WEBSTER COUNTY, GEORGIA

LAND LOT NO. 111, 114, 143, 19TH LAND DISTRICT



PLAN
1" = 100'



PROFILE
1" = 100' HORIZ.
1" = 100' VERT.

0 100 200
SCALE IN FEET

NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT–OF–WAY. FINAL LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE ENVIRONMENTAL INSPECTOR.
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING.
4. ADDITIONAL TEMPORARY WORKSPACE, STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
5. IMPLEMENTATION OF THE DAM–AND–PUMP CROSSING METHOD MUST MEET THE FOLLOWING PERFORMANCE CRITERIA:
   A. CONSTRUCT DAMS WITH MATERIALS THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY (E.G., SANDBAGS AND PLASTIC LINER OR EQUIVALENT).
   B. SCREEN PUMP INTAKE
   C. PREVENT STREAMBED SCOUR AT PUMP DISCHARGE.
   D. MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
7. INSTALL SLOPE BREAKERS AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
8. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
9. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
10. INSTALLATION OF TEMPORARY EQUIPMENT CROSSING IS OPTIONAL AT THE DIRECTION OF THE COMPANY'S REPRESENTATIVE.
11. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. FOLLOWING CLEARING AND GRADING AND MAINTAIN UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
12. WATERBODY SPOIL TO BE STORED OUT OF THE CHANNEL A MINIMUM OF 10 FEET FROM THE BANK AND WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN SITE SPECIFIC CROSSING PLANS. ADDITIONAL TEMPORARY WORKSPACE MUST BE A MINIMUM OF 50 FEET FROM THE WATERS EDGE.
13. BACKFILL WITH NATIVE MATERIAL.
14. RESTORE BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

LEGEND
- PERMANENT EASEMENT
- TEMPORARY WORKSPACE (TWS)
- ADDITIONAL TEMPORARY WORKSPACE (ATWS)

REF. FERC ALIGNMENT : 1657–PL–DG–70097–115

PRELIMINARY

DRAWN BY:	DT	DATE:	03/12/15
CHECKED BY:	JW	DATE:	03/12/15
SCALE:	AS SHOWN	W.O.:	
B	ISSUED FOR CLIENT REVIEW		03/19/15
A	ISSUED FOR REVIEW		03/12/15
REV.	DESCRIPTION		DATE

Sabal Trail TRANSMISSION

SABAL TRAIL TRANSMISSION
PROPOSED 36" PIPELINE
WATERBODY CROSSING
POND (WB5TRC014) @ M.P. 114.03

WEBSTER COUNTY, GEORGIA

DRAWING NUMBER: 1657–PL–DG–32600 | SHEET NO. 1 OF 1 | REV. B

3:05:47 PM 3/19/2015
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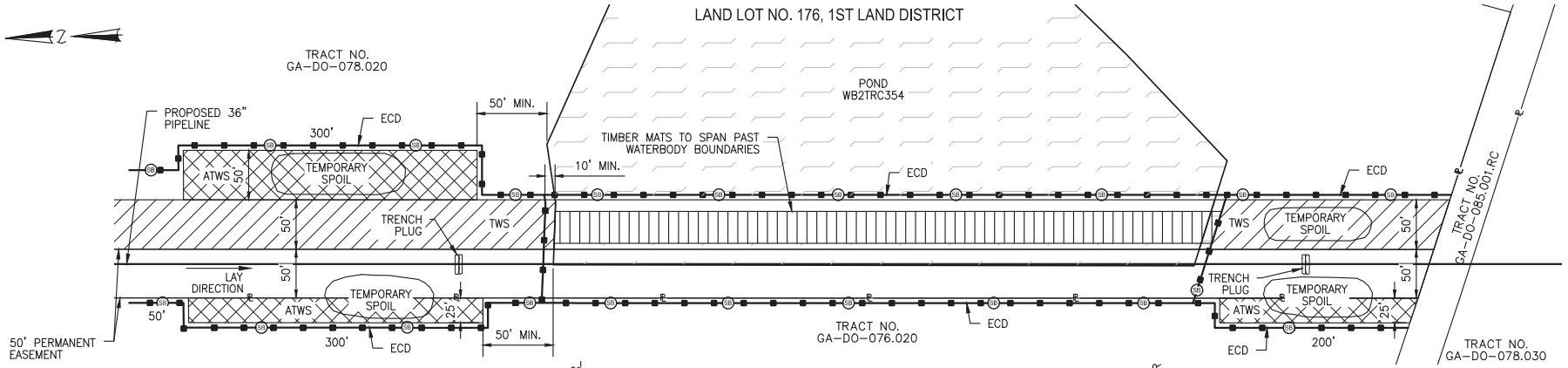
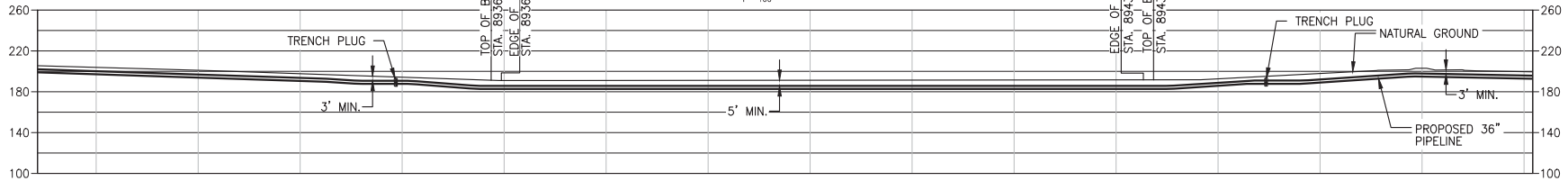
DOUGHERTY COUNTY, GEORGIA
LAND LOT NO. 176, 1ST LAND DISTRICT



PLAN
1" = 100'



PROFILE
1" = 100' HORIZ.
1" = 100' VERT.

0 100 200
SCALE IN FEET

NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY. FINAL LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE ENVIRONMENTAL INSPECTOR.
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING.
4. ADDITIONAL TEMPORARY WORKSPACE, STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
5. IMPLEMENTATION OF THE DAM-AND-PUMP CROSSING METHOD MUST MEET THE FOLLOWING PERFORMANCE CRITERIA:
   A. CONSTRUCT DAMS WITH MATERIALS THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY (E.G., SANDBAGS AND PLASTIC LINER OR EQUIVALENT).
   B. SCREEN PUMP INTAKE
   C. PREVENT STREAMBED SCOUR AT PUMP DISCHARGE.
   D. MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
7. INSTALL SLOPE BREAKERS AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
8. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
9. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
10. INSTALLATION OF TEMPORARY EQUIPMENT CROSSING IS OPTIONAL AT THE DIRECTION OF THE COMPANY'S REPRESENTATIVE.
11. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. FOLLOWING CLEARING AND GRADING AND MAINTAIN UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
12. WATERBODY SPOIL TO BE STORED OUT OF THE CHANNEL A MINIMUM OF 10 FEET FROM THE BANK AND WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN SITE SPECIFIC CROSSING PLANS. ADDITIONAL TEMPORARY WORKSPACE MUST BE A MINIMUM OF 50 FEET FROM THE WATERS EDGE.
13. BACKFILL WITH NATIVE MATERIAL.
14. RESTORE BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

LEGEND
- PERMANENT IMPACTS
- TEMPORARY WORKSPACE (TWS) IMPACTS
- ADDITIONAL TEMPORARY WORKSPACE (ATWS) IMPACTS

REF. FERC ALIGNMENT : 1657-PL-DG-70097-171

PRELIMINARY

Sabal Trail TRANSMISSION

DRAWN BY: DT	DATE: 03/12/15		
CHECKED BY: JW	DATE: 03/12/15		
SCALE: AS SHOWN	W.O.:		
B	ISSUED FOR CLIENT REVIEW	03/19/15	
A	ISSUED FOR REVIEW	03/12/15	
REV.	DESCRIPTION	DATE	

SABAL TRAIL TRANSMISSION
PROPOSED 36" PIPELINE
WATERBODY CROSSING
POND (WB2TRC354) @ M.P. 169.32

DOUGHERTY COUNTY, GEORGIA

DRAWING NUMBER: 1657-PL-DG-32601 | SHEET NO. 1 OF 1 | REV. B

3:07:45 PM 3/19/2015
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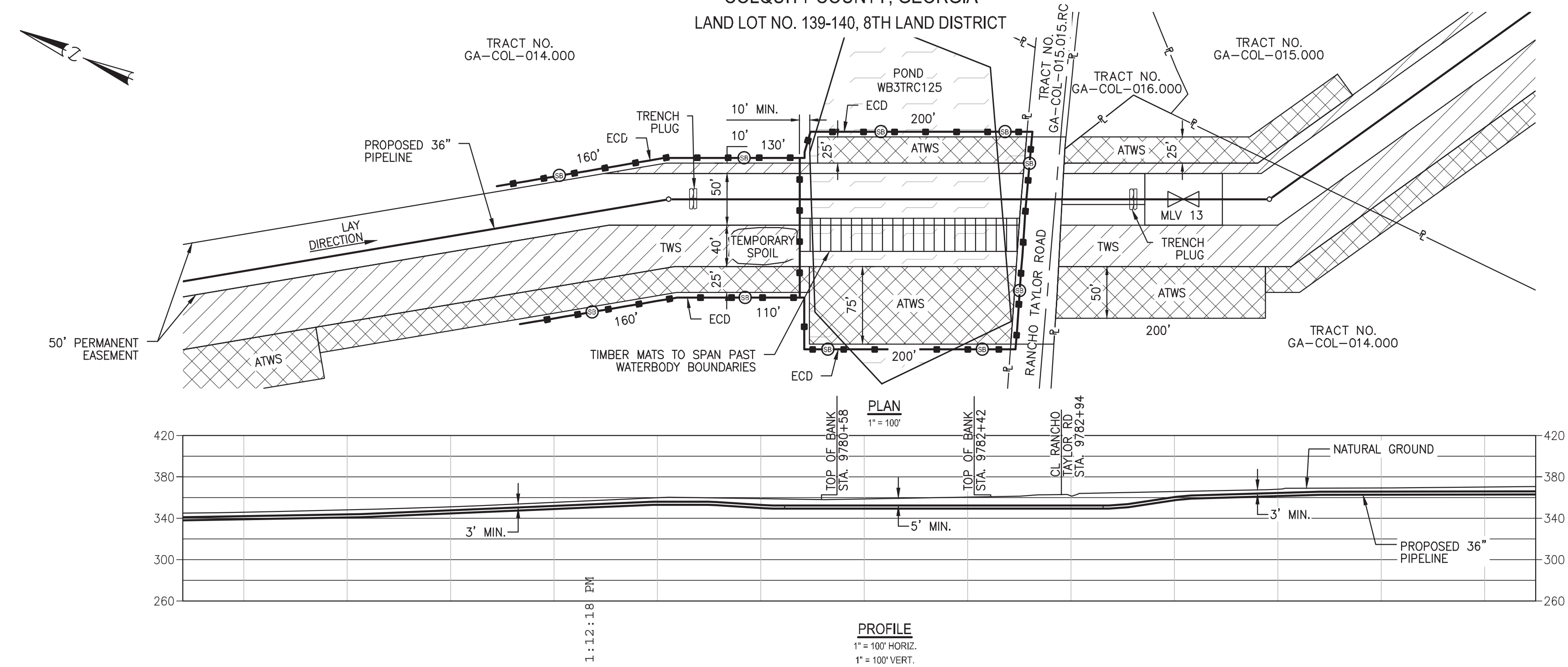
J-6

COLQUITT COUNTY, GEORGIA

LAND LOT NO. 139-140, 8TH LAND DISTRICT



NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY. FINAL LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE ENVIRONMENTAL INSPECTOR.
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING.
4. ADDITIONAL TEMPORARY WORKSPACE, STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
5. IMPLEMENTATION OF THE DAM-AND-PUMP CROSSING METHOD MUST MEET THE FOLLOWING PERFORMANCE CRITERIA:
   A. CONSTRUCT DAMS WITH MATERIALS THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY (E.G., SANDBAGS AND PLASTIC LINER OR EQUIVALENT).
   B. SCREEN PUMP INTAKE
   C. PREVENT STREAMBED SCOUR AT PUMP DISCHARGE.
   D. MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
7. INSTALL SLOPE BREAKERS AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
8. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
9. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
10. INSTALLATION OF TEMPORARY EQUIPMENT CROSSING IS OPTIONAL AT THE DIRECTION OF THE COMPANY'S REPRESENTATIVE.
11. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. FOLLOWING CLEARING AND GRADING AND MAINTAIN UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
12. WATERBODY SPOIL TO BE STORED OUT OF THE CHANNEL A MINIMUM OF 10 FEET FROM THE BANK AND WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN SITE SPECIFIC CROSSING PLANS. ADDITIONAL TEMPORARY WORKSPACE MUST BE A MINIMUM OF 50 FEET FROM THE WATERS EDGE.
13. BACKFILL WITH NATIVE MATERIAL.
14. RESTORE BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

LEGEND

- PERMANENT IMPACTS
- TEMPORARY WORKSPACE (TWS) IMPACTS
- ADDITIONAL TEMPORARY WORKSPACE (ATWS) IMPACTS

REF. FERC ALIGNMENT : 1657-PL-DG-70097-187

Sabal Trail TRANSMISSION

DRAWN BY:	DT	DATE:	03/12/15
CHECKED BY:	JW	DATE:	06/09/15
SCALE: AS SHOWN		W.O.:	
1	ISSUED FOR PERMITTING		06/09/15
REV.	DESCRIPTION		DATE

SABAL TRAIL TRANSMISSION
PROPOSED 36" PIPELINE
WATERBODY CROSSING
POND (WB3TRC125) @ M.P. 185.26R

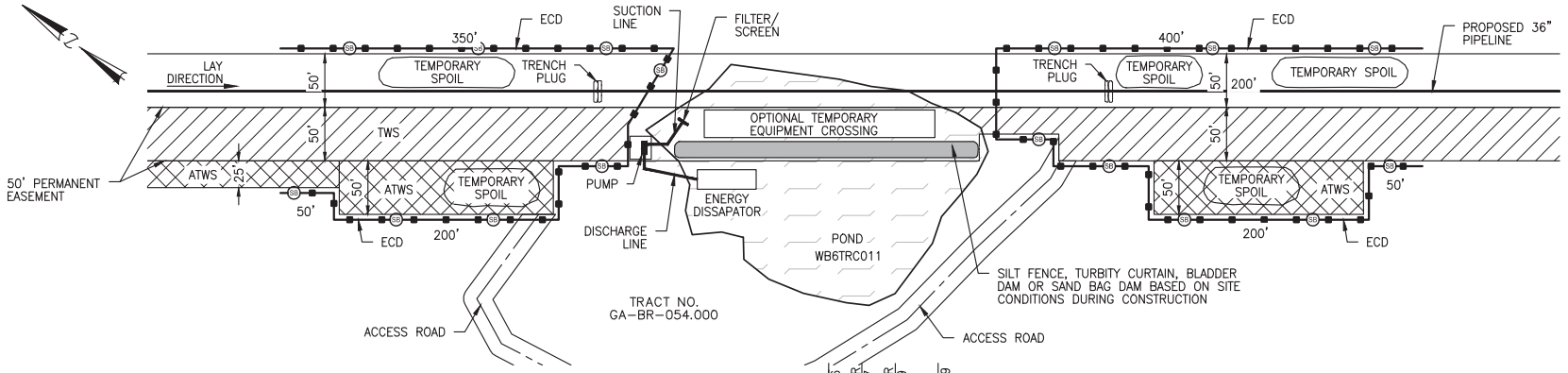
COLQUITT COUNTY, GEORGIA

DRAWING NUMBER:	SHEET NO.	REV.
1657-PL-DG-32602	1 OF 1	1

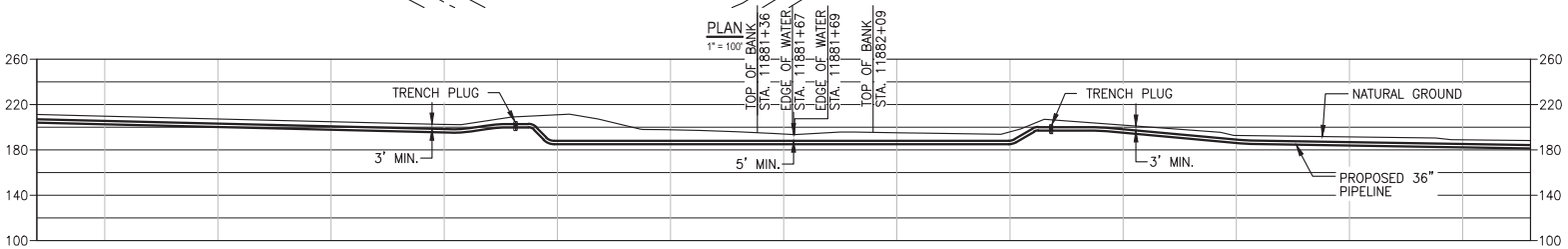
1:33:09 PM 6/9/2015
C:\Work\Vault\1657\PL - Pipeline\3 Pipeline\Permit Waterbody\1657-PL-DG-32602.dwg

BROOK COUNTY, GEORGIA

LAND LOT NO. 309, 12TH LAND DISTRICT



PLAN
1" = 100'



PROFILE
1" = 100' HORIZ.
1" = 100' VERT.

0 100 200
SCALE IN FEET

NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY. FINAL LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE ENVIRONMENTAL INSPECTOR.
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING.
4. ADDITIONAL TEMPORARY WORKSPACE, STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
5. IMPLEMENTATION OF THE DAM-AND-PUMP CROSSING METHOD MUST MEET THE FOLLOWING PERFORMANCE CRITERIA:
   A. CONSTRUCT DAMS WITH MATERIALS THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY (E.G., SANDBAGS AND PLASTIC LINER OR EQUIVALENT).
   B. SCREEN PUMP INTAKE
   C. PREVENT STREAMBED SCOUR AT PUMP DISCHARGE.
   D. MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.
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7. INSTALL SLOPE BREAKERS AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
8. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
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11. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. FOLLOWING CLEARING AND GRADING AND MAINTAIN UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
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13. BACKFILL WITH NATIVE MATERIAL.
14. RESTORE BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

LEGEND
- PERMANENT IMPACTS
- TEMPORARY WORKSPACE (TWS) IMPACTS
- ADDITIONAL TEMPORARY WORKSPACE (ATWS) IMPACTS

REF. FERC ALIGNMENT : 1657-PL-DG-70097-227

PRELIMINARY

Sabal Trail TRANSMISSION

DRAWN BY: DT	DATE: 03/12/15		
CHECKED BY: JW	DATE: 03/12/15		
SCALE: AS SHOWN	W.O.:		
B	ISSUED FOR CLIENT REVIEW	03/19/15	
A	ISSUED FOR REVIEW	03/12/15	
REV.	DESCRIPTION	DATE	

SABAL TRAIL TRANSMISSION
PROPOSED 36" PIPELINE
WATERBODY CROSSING
POND (WB6TRC011) @ M.P. 225.03
BROOK COUNTY, GEORGIA

DRAWING NUMBER: 1657-PL-DG-32603 | SHEET NO. 1 OF 1 | REV. B

3:11:01 PM 3/19/2015
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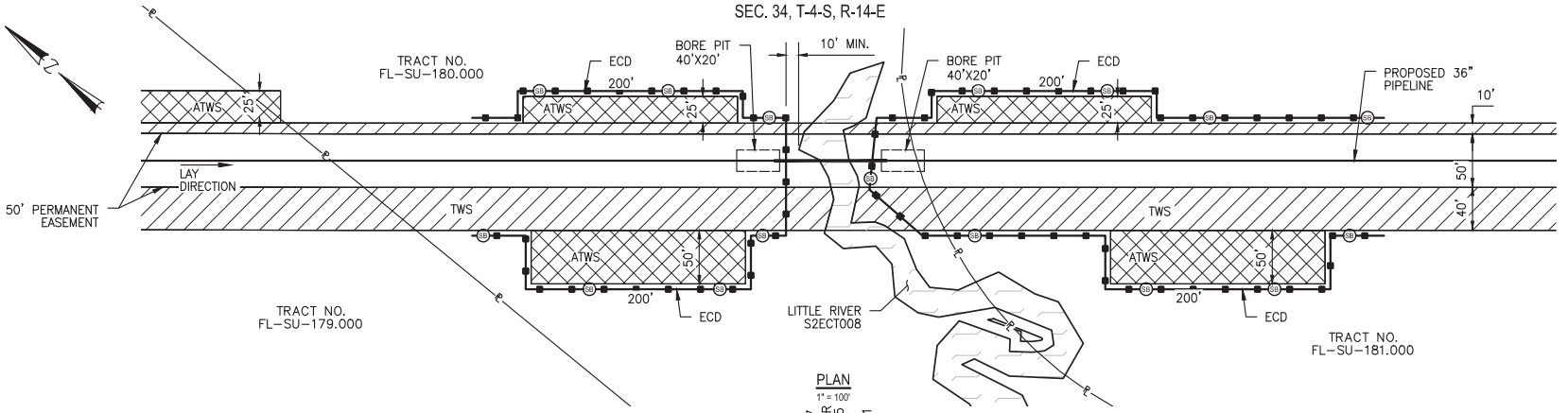
J-7

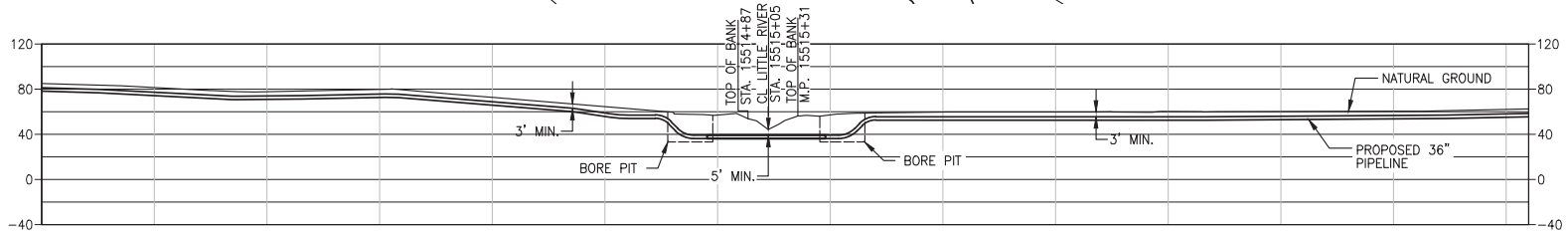
SUWANNEE COUNTY, FLORIDA

SEC. 34, T-4-S, R-14-E



PLAN

1" = 100'



PROFILE

1" = 100' HORIZ.

1" = 100' VERT.

0 100 200

SCALE IN FEET

NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY. FINAL LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE ENVIRONMENTAL INSPECTOR.
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING.
4. ADDITIONAL TEMPORARY WORKSPACE, STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
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   - A. CONSTRUCT DAMS WITH MATERIALS THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY (E.G., SANDBAGS AND PLASTIC LINER OR EQUIVALENT).
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   - C. PREVENT STREAMBED SCOUR AT PUMP DISCHARGE.
   - D. MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.
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13. BACKFILL WITH NATIVE MATERIAL.
14. RESTORE BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

LEGEND

- PERMANENT IMPACTS
- TEMPORARY WORKSPACE (TWS) IMPACTS
- ADDITIONAL TEMPORARY WORKSPACE (ATWS) IMPACTS

REF. FERC ALIGNMENT : 1657-PL-DG-70097-295

PRELIMINARY

Sabal Trail TRANSMISSION

DRAWN BY: DT	DATE:	03/12/15	
CHECKED BY: JW	DATE:	03/12/15	
SCALE: AS SHOWN	W.O.:		
B	ISSUED FOR CLIENT REVIEW	03/19/15	
A	ISSUED FOR REVIEW	03/12/15	
REV.	DESCRIPTION	DATE	

SABAL TRAIL TRANSMISSION
PROPOSED 36" PIPELINE
WATERBODY CROSSING
LITTLE RIVER (S2ECT008) @ M.P. 293.85

SUWANNEE COUNTY, FLORIDA

DRAWING NUMBER: 1657-PL-DG-32604 | SHEET NO. 1 OF 1 | REV. B

3:14:02 PM 3/19/2015
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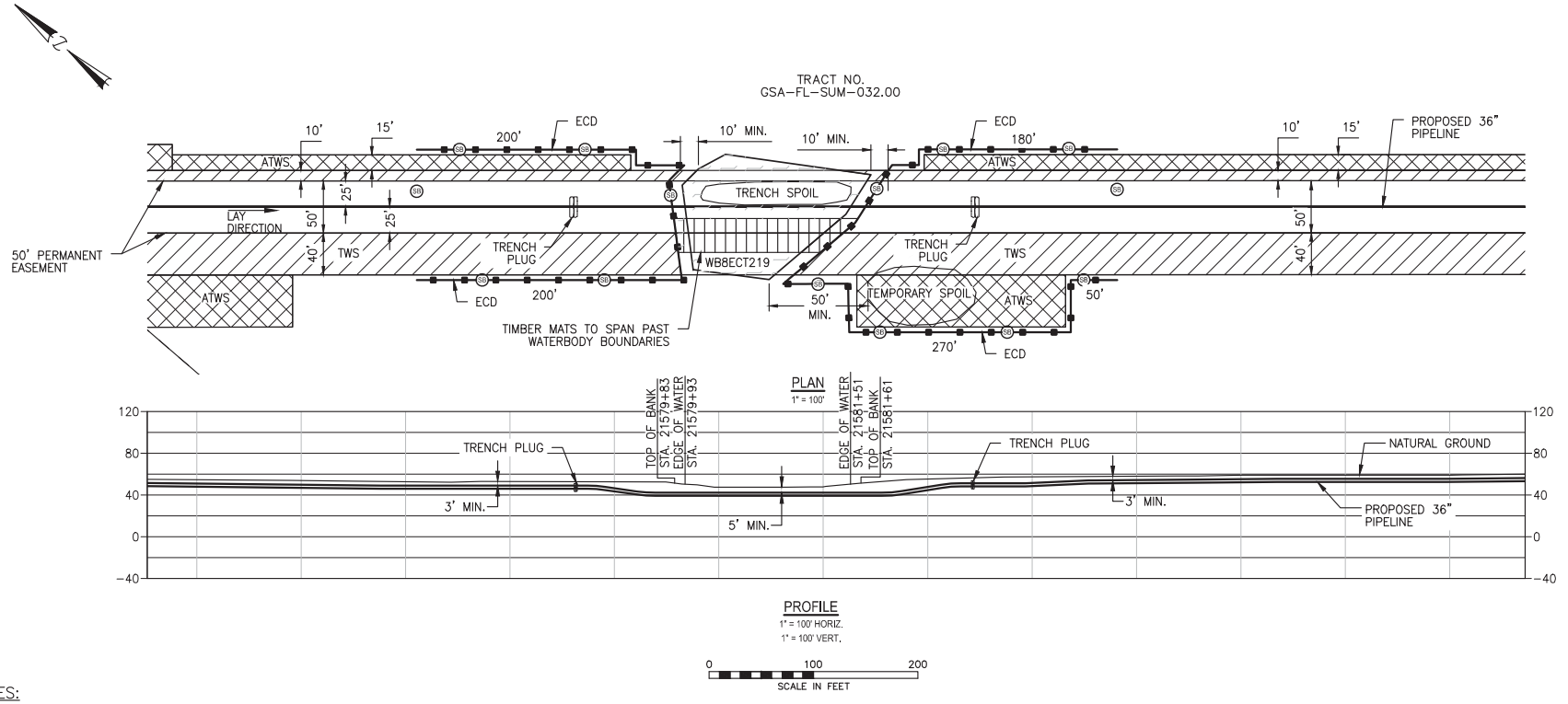
SUMTER COUNTY, FLORIDA

SEC. 33, T-18-S, R-22-E



PROFILE

1" = 100' HORIZ.

1" = 100' VERT.

0 100 200

SCALE IN FEET

NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY. FINAL LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE ENVIRONMENTAL INSPECTOR.
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING.
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   - C. PREVENT STREAMBED SCOUR AT PUMP DISCHARGE.
   - D. MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.
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7. INSTALL SLOPE BREAKERS AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
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13. BACKFILL WITH NATIVE MATERIAL.
14. RESTORE BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

LEGEND

- PERMANENT IMPACTS
- TEMPORARY WORKSPACE (TWS) IMPACTS
- ADDITIONAL TEMPORARY WORKSPACE (ATWS) IMPACTS

REF. FERC ALIGNMENT : 1657-PL-DG-70097-412

PRELIMINARY

DRAWN BY: DT		DATE:	03/12/15
CHECKED BY: JW		DATE:	03/12/15
SCALE: AS SHOWN		W.O.:	
B	ISSUED FOR CLIENT REVIEW		03/19/15
A	ISSUED FOR REVIEW		03/12/15
REV.	DESCRIPTION		DATE

Sabal Trail TRANSMISSION

SABAL TRAIL TRANSMISSION
PROPOSED 36" PIPELINE
WATERBODY CROSSING
WB8ECT219 @ M.P. 408.73

SUMTER COUNTY, FLORIDA

DRAWING NUMBER:	SHEET NO.	REV.
1657-PL-DG-32605	1 OF 1	B

3:15:58 PM 3/19/2015
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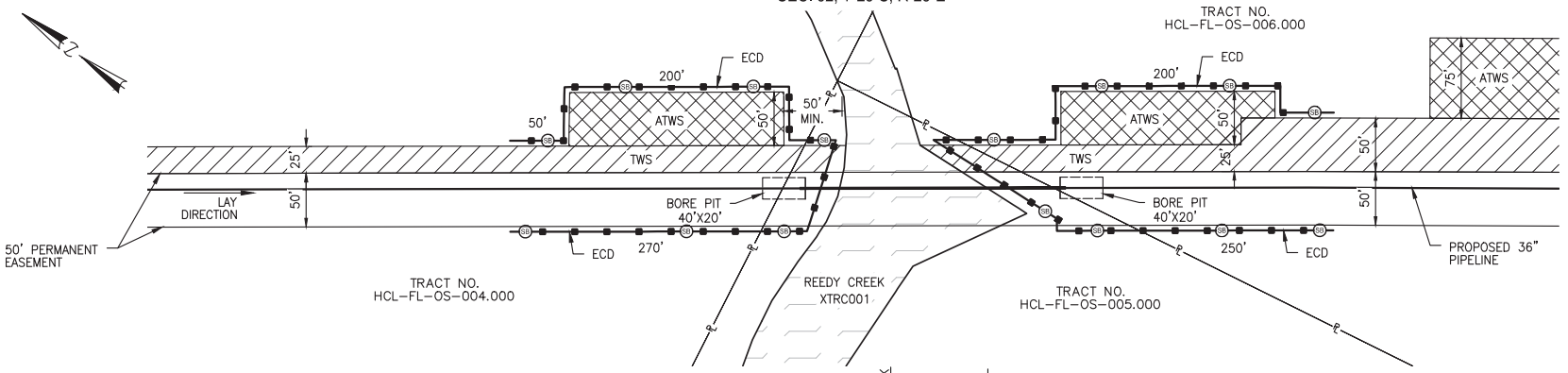
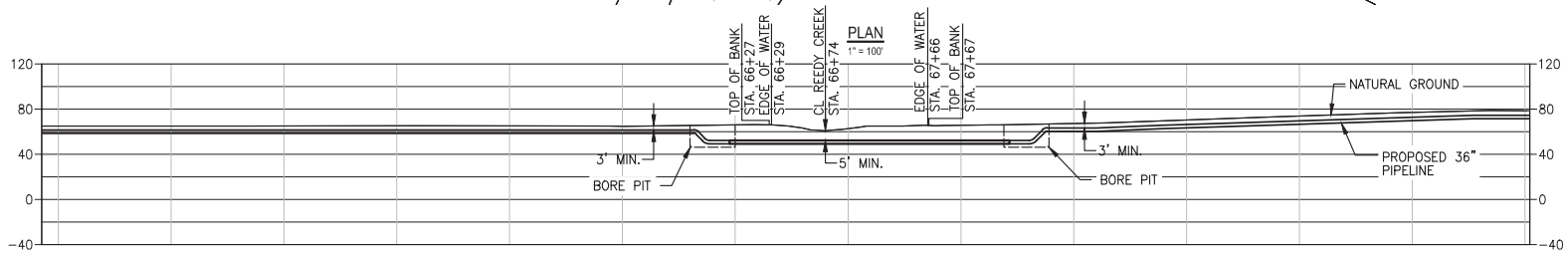
OSCEOLA COUNTY, FLORIDA

SEC. 32, T-25-S, R-28-E





PROFILE

1" = 100' HORIZ.

1" = 100' VERT.

0 100 200

SCALE IN FEET

NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY. FINAL LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE ENVIRONMENTAL INSPECTOR.
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13. BACKFILL WITH NATIVE MATERIAL.
14. RESTORE BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

LEGEND

- PERMANENT IMPACTS
- TEMPORARY WORKSPACE (TWS) IMPACTS
- ADDITIONAL TEMPORARY WORKSPACE (ATWS) IMPACTS

REF. FERC ALIGNMENT : 1657-HCL-DG-70097-002

PRELIMINARY

Sabal Trail TRANSMISSION

DRAWN BY: DT	DATE: 03/12/15		
CHECKED BY: JW	DATE: 03/12/15		
SCALE: AS SHOWN	W.O.:		
B	ISSUED FOR CLIENT REVIEW	03/19/15	
A	ISSUED FOR REVIEW	03/12/15	
REV.	DESCRIPTION	DATE	

SABAL TRAIL TRANSMISSION
PROPOSED 36" PIPELINE
WATERBODY CROSSING
REEDY CREEK (XTRC001) @ M.P. 1.26

OSCEOLA COUNTY, FLORIDA

DRAWING NUMBER: 1657-PL-DG-32606 | SHEET NO. 1 OF 1 | REV. B

3:19:16 PM 3/19/2015
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